DOCUMENT RESUME

ED 256 235 HE 018 270

TITLE	Graduate Education in California: Trends and Issues. Commission Report 85-2.
INSTITUTION	California State Postsecondary Education Commission, Sacramento.
PUB DATE	21 Jan 85
NOTE	137p.
AVAILABLE FROM	California Postsecondary Education Commission, 1020 Twelfth Street, Sacramento, CA 95814.
PUB TYPE	Reports - Descriptive (141) -- Statistical Data (110)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Doctoral Degrees; Education Majors; *Enrollment Trends; Ethnic Groups; Females; Foreign Students; *Graduate Study; *Majors (Students); *Masters Degrees; Minority Groups; Postsecondary Education; Private Colleges; Public Policy; *State Universities
IDENTIFIERS	*California; California State University; University of California

ABSTRACT

Comparative data on California graduate school enrollments and degrees for 1977-78 and 1981-82 are presented, and issues in graduate education that have state policy implications are discussed. Although some data for California private institutions are provided, attention is focused on academic master's and doctor's degrees, rather than first professional degrees, at California State University and University of California. The growth of the doctoral and master's degrees nationally is also briefly considered, along with graduate school enrollments/degrees by study field for ethnic minorities, foreign students, and women. Findings include the following: foreign language programs experienced consistent and broad-scale enrollment losses; computer science programs experienced the most consistent increases; graduate programs in English on six California State University campuses lost more than one-third of their enrollments since 1978; among the natural science disciplines, only programs in biology showed appreciable losses; degrees in education represented one-third of all graduate degrees conferred by California State University; and business administration enrollments at the University of California increased 95 percent in the past 5 years. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED256235

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

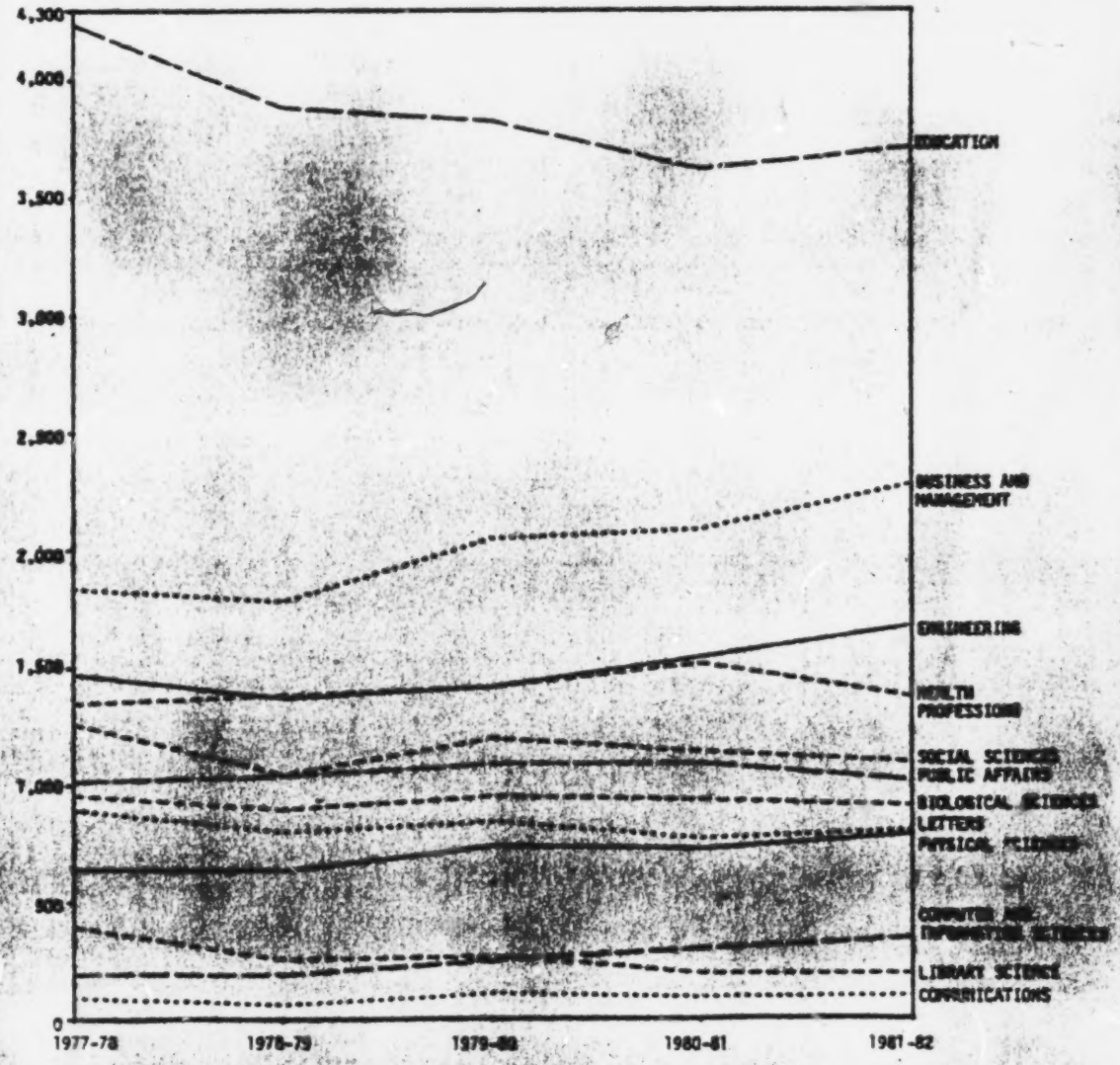
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
California Postsecondary Education Commission

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

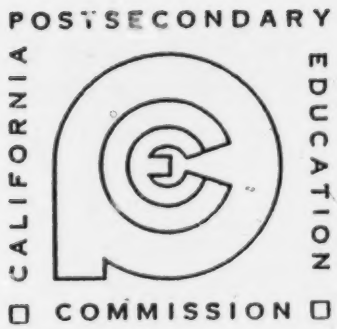


THE COVER depicts trends in the number of master's and doctor's degrees awarded by California's colleges and universities in 19 major fields of study between 1977-78 and 1981-82. (Not included are first-professional degrees in such fields as dentistry, law, medicine, and pharmacy.)

The figure above identifies 12 of the 19 fields of study depicted on the cover. Over the five years, the number of graduate degrees awarded in education dropped from 4,238 to 3,715, while those granted in business management rose from 1,836 to 2,282. As can be seen above, fields making clear gains included engineering, the physical sciences, and computer and information sciences. Fields losing students included the social sciences, letters, and library science. Not shown above, but expanding, were agriculture and architecture, while the fine arts and foreign languages declined. Also not shown above, but holding relatively steady, were home economics, mathematics, and psychology.

GRADUATE EDUCATION IN CALIFORNIA

Trends and Issues



CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
1020 Twelfth Street, Sacramento, California 95814

Commission Report 85-2

Adopted January 21, 1985

The California Postsecondary Education Commission was created by the Legislature and the Governor in 1974 as the successor to the California Coordinating Council for Higher Education in order to coordinate and plan for education in California beyond the high school. As a State agency, the Commission is responsible for assuring that the State's resources for postsecondary education are utilized effectively and efficiently; for promoting diversity, innovation, and responsiveness to the needs of students and society; and for advising the Legislature and the Governor on statewide educational policy and funding.

The Commission consists of 15 members. Nine represent the general public, with three each appointed by the Speaker of the Assembly, the Senate Rules Committee, and the Governor. The other six represent the major educational systems of the State.

The Commission holds regular public meetings throughout the year at which it takes action on staff studies such as this and adopts positions on legislative proposals affecting postsecondary education. Further information about the Commission, its meetings, its staff, and its other publications may be obtained from the Commission offices at 1020 Twelfth Street, Sacramento, California 95814; telephone (916) 445-7933.

CONTENTS

		Page
SUMMARY OF FINDINGS		vii
INTRODUCTION:	RATIONALE AND SCOPE OF THE REPORT	1
ONE:	HISTORY AND PROSPECTS OF GRADUATE STUDY	5
	Growth of the Doctorate Nationally	5
	The Doctorate in California	8
	Growth of the Master's Degree Nationally	11
	The Master's Degree in the California State University	12
	The Future Market for Graduate Degree Holders	13
TWO:	RECENT TRENDS IN GRADUATE ENROLLMENTS AND DEGREES	17
	Graduate Enrollments During the Past Decade	17
	Graduate Degrees Awarded During the Past Half-Decade	21
	Graduate Degrees Awarded by Segments in California	33
THREE:	RECENT ENROLLMENT AND DEGREE TRENDS ON INDIVIDUAL CAMPUSES OF CALIFORNIA'S PUBLIC UNIVERSITIES	55
FOUR:	ETHNIC MINORITY AND FOREIGN STUDENTS IN CALIFORNIA'S PUBLIC UNIVERSITIES	59
	Distribution of Ethnic Minority Students Among Fields of Study	61
	Foreign Students and Degree Recipients	65
FIVE:	CONCLUSIONS	69
APPENDIX A:	Graduate Enrollments and Degrees Awarded in Selected Fields of Study at California's Public Universities, 1978-1982	75
APPENDIX B:	Ethnicity of Graduate Students and Degree Recipients by Field of Study in California's Public Universities, 1978 and 1982	117
APPENDIX C:	Proportion of Women Graduate Students and Degree Recipients by Field of Study in California's Public Universities, 1978 and 1982	123
REFERENCES		127
INDEX		129

TABLES

		Page
1.	Earned Degrees Conferred by American Institutions of Higher Education, by Level of Degree, 1969-70 Through 1979-80	7
2.	Doctor's Degrees Conferred by Sixty Large Institutions of Higher Education, 1970-71 Through 1979-80	10
3.	Enrollments at Accredited California Colleges and Universities by Level, Sex, and Full-Time and Part-Time Status of Students, Fall 1973, Fall 1978, and Fall 1982	20
4.	Master's Degrees Awarded in the United States by General Field of Study and Sex, 1977-78 and 1981-82	24-25
5.	Doctor's Degrees Awarded in the United States by General Field of Study and Sex, 1977-78 and 1981-82	29-30
6.	Percentage Change in the Number of Graduate Degrees Awarded in the United States and in California, by General Field of Study, Between 1977-78 and 1981-82	31
7.	Master's Degrees Awarded by Accredited California Institutions, by General Field of Study, Segment, and Sex, 1977-78 and 1981-82	34-40
8.	Doctor's Degrees Awarded by Accredited California Institutions, by General Field of Study, Segment, and Sex, 1977-78 and 1981-82	41-47
9.	Minority Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982	59
10.	Selected Ethnic Minority Group Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982	62
11.	Popular and Unpopular Fields of Study for Asian, Black, and Hispanic Graduate Students in the University of California and the California State University, Fall 1982	63
12.	Foreign Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982	65
13.	University of California and California State University Programs Enrolling the Highest and Lowest Percentage of Foreign Graduate Students in Fall 1982	67
14.	Ethnicity of University of California Graduate Students by Field of Study, Fall 1978 and Fall 1982	119
15.	Ethnicity of California State University Graduate Students by Field of Study, Fall 1978 and Fall 1982	119
16.	Ethnicity of University of California Master's Degree Recipients by Field of Study, 1978-79 and 1982-83	120

TABLES (continued)

		Page
17.	Ethnicity of University of California Doctoral Degree Recipients by Field of Study, 1978-79 and 1982-83	120
18.	Ethnicity of California State University Master's Degree Recipients by Field of Study, 1978-79 and 1982-83	121
19.	Percent and Number of Master's Degrees Awarded to Women in California, 1978 and 1982	125
20.	Percent and Number of Master's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982	125
21.	Percent and Number of Doctor's Degrees Awarded to Women in Calfornia, 1978 and 1982	126
22.	Percent and Number of Doctor's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982	126

FIGURES

		Page
1.	Earned Master's and Doctor's Degrees Conferred by American Institutions of Higher Education, 1949-50 Through 1981-82	6
2.	Earned Doctor's Degrees Conferred by Five Major California Universities, 1971-72 Through 1981-82	9
3.	Graduate Enrollments in American Institutions of Higher Education, Fall 1973 Through Fall 1982	18
4.	Graduate Enrollments in Accredited California Institutions of Higher Education, Fall 1983 Through Fall 1982	18
5.	Graduate Degrees Awarded in the United States by General Field of Study, 1977-78 Through 1981-82	26
6.	Graduate Degrees Awarded by Accredited California Institutions of Higher Education, 1977-78 Through 1981-82	32
7.	Graduate Degrees Awarded by the University of California, 1977-78 Through 1981-82	48
8.	Graduate Degrees Awarded by the California State University, 1977-78 Through 1981-82	49
9.	Graduate Degrees Awarded by Accredited Independent California Universities, 1977-78 Through 1981-82	50

DISPLAYS

Graduate Enrollments and Degrees Awarded in Selected Disciplines at the University of California and the California State University, 1978-1982

		Page
1.	Biological Sciences: General Biology	57
2.	Biological Sciences: Biochemistry	58
3.	Biological Sciences: Botany	59
4.	Biological Sciences: Microbiology	60
5.	Business and Management: Business and Administration	61
6.	Computer and Information Sciences, General	62
7.	Education, General	63
8.	Education: Physical Education	64
9.	Engineering, General	65
10.	Engineering: Chemical Engineering	66
11.	Engineering: Civil, Construction, and Transportation Engineering	67
12.	Engineering: Electrical, Electronics, and Communications Engineering	68
13.	Engineering: Mechanical Engineering	69
14.	Fine and Applied Arts: Art (Painting, Drawing, and Sculpture)	70
15.	Fine and Applied Arts: Dramatic Arts	71
16.	Fine and Applied Arts: Music (Liberal Arts Programs)	72
17.	Foreign Languages: French	73
18.	Foreign Languages: German	74
19.	Foreign Languages: Spanish	75
20.	Health Professions: Nursing	76
21.	Letters: Classics	77
22.	Letters: Comparative Literature	78
23.	Letters: English	79
24.	Letters: Linguistics	80
25.	Letters: Speech, Debate, and Forensic Science	81
26.	Letters: Philosophy	82
27.	Mathematics, General	83
28.	Physical Sciences: Chemistry, General	84
29.	Physical Sciences: Geology	85
30.	Physical Sciences: Physics, General	86
31.	Psychology, General	87
32.	Public Affairs and Services: Public Administration	88
33.	Public Affairs and Services: Social Work and Helping Services	89
34.	Social Sciences: Anthropology	90
35.	Social Sciences: Economics	91
36.	Social Sciences: Geography	92
37.	Social Sciences: History	93
38.	Social Sciences: Political Science and Government	94
39.	Social Sciences: Sociology	95

SUMMARY OF FINDINGS

1. The most conspicuous development in graduate education at California's colleges and universities during recent years has been the shift of enrollments to a few fields with corresponding losses in many others. In general, the rapidly expanding programs are in "applied" subjects; those shrinking in enrollments are in the traditional liberal arts fields.

   Among the changes within individual fields of study between 1978 and 1982 at the California State University and the University of California, these are notable:

   - Programs in foreign languages sustained more consistent and broad-scale losses than those in any other discipline. Of the 42 graduate programs in French, German, and Spanish offered by both segments, 37 lost enrollment; half of the programs lost more than 20 percent of their students during the five-year period.

   - Programs in computer science enjoyed the most consistent increases. All but two of the 18 programs gained in majors, 13 of them more than doubling in size.

   - A majority of programs in all branches of engineering showed impressive gains, as enrollments in half of all programs in the major specialties increased by more than 20 percent. At the same time, however, one of every three programs lost students, and fewer doctorates were conferred in 1982 than in 1978.

   - Graduate programs in English on six State University campuses have lost more than one-third of their enrollments since 1978. Enrollments fell in 16 of the 19 programs in English, as they did in all six programs in linguistics, and five of the six programs in philosophy.

   - Among the natural science disciplines, only programs in biology show appreciable losses. Of the 21 programs in general biology, 18 lost enrollments. The decline in general biology has not resulted from a shift to the more specialized programs in botany, biochemistry, microbiology, or zoology as graduate programs in all these subjects, especially in the State University, dropped sharply as well.

   - Although fewer students earned master's degrees in education in 1982 than in 1978, degrees in this field still represent one-third of all graduate degrees conferred by the State University and one-fifth of all master's degrees awarded in California in 1982.

   - In view of the heavy enrollment declines in the social sciences nationally, the University's graduate programs in these subjects have fared surprisingly well since 1978. Social science programs in the State University, however, have suffered staggering losses. All nine programs in anthropology and all 14 programs in history lost students,

as did eight of the 10 programs in geography, 10 of the 11 in political science, and eight of the 10 in sociology. Three-fourths of all programs currently offered in these disciplines lost at least 20 percent of their enrollments during the five-year period, and many lost more than that. Only two of the 63 programs in the social science disciplines awarded more than 10 master's degrees in 1982; most awarded fewer than five.

- Enrollments in business administration programs in the University of California increased 95 percent in five years. Degrees in business now account for 16 percent of all master's degrees awarded by the University and 14 percent by the State University. Independent institutions, however, conferred over 4,500 master's degrees in business in 1982, more than twice as many as the University and State University combined.

2. A second important development is the growth of graduate enrollments in independent institutions. While graduate enrollments in the University of California and the California State University increased slightly during the past decade (from 88,000 in 1973 to 91,000 in 1982) enrollments in independent universities were up 62 percent. As a result, 40 percent of all graduate students in the State are now enrolled in independent institutions.

   - Almost one-third of all master's degrees awarded by independent universities in 1982 were in business administration.

   - Independent institutions awarded 42 percent of all master's degrees in engineering and close to 40 percent of those in education in California in 1982.

   - California's independent institutions conferred 574 doctoral degrees in psychology, one-fifth of all Ph.D.s in psychology in the country in 1982.

3. Another development, with implications for the differentiation of function provisions of the Master Plan, concerns the proportion of graduate to undergraduate enrollments at the University of California and the California State University. Despite the steady demand for graduate education in public universities, graduate enrollments as a proportion of total enrollments have declined in both the University of California and the California State University to 20 percent. Ten years earlier, graduate enrollments amounted to 30 percent of total enrollment in the University and 23 percent in the State University.

4. The percentages of women and men enrolled in graduate education continue to change significantly.

   - Between 1978 and 1982, women continued to increase their share of graduate degrees earned in most fields of study in California's public and independent universities. The number of master's degrees

awarded to women increased 9 percent in the University, 8 percent in the State University, and 22 percent in independent institutions during this period. The number of doctorates earned by women increased 30 percent in the University and 27 percent in independent universities.

- In all but one field (education), women increased their percentage of degrees awarded, despite receiving fewer degrees in some subjects than five years ago. The number of men earning degrees in those fields was declining even more rapidly.

- The number of women earning master's degrees in business administration and computer science has more than doubled since 1978. Women received 28 percent of all master's degrees in business in 1982, and 21 percent of the master's degrees in computer science.

- Despite a 24 percent drop in the number of master's degrees in education earned by women, they still accounted for over 70 percent awarded in this field. Women also received just over 50 percent of the doctorates in education in 1982.

- Almost one-fourth of the doctorates awarded to women were in the field of psychology. Of these, 88 percent (269 of the 310 Ph.D.s) came from independent institutions.

- The number of men enrolled in graduate programs in the State University has declined more than 10 percent during the last five years (from 30,412 to 27,564). Male enrollments in the University of California increased by 7.5 percent during the same period.

5. As a group, the percentage of ethnic minority students enrolled and earning degrees has increased at all levels in both segments since 1978. The record for separate minority groups varies however.

   - Asian students continue to increase their representation at the graduate, as well as the undergraduate levels. Asian students made up 10 percent of the graduate enrollment in the University and 8 percent in the State University in 1982. In the 1980 Census, Asian Americans represented 4 percent of the 22-30 age group in the State's population as a whole (207,000 of 5,020,000).

   - Asian students concentrate heavily in engineering and computer science programs in both the University of California and the California State University. They represent 20 percent of all students in engineering in the University and 30 percent in the State University.

   - The percentage of Hispanic graduate students is up in both segments to 6 percent in the University and 7.6 percent in the State University, higher in both cases than the percentage of Hispanics receiving bachelor's degrees in that segment. In the State's population as a whole, Hispanics make up 21 percent of the 22-30 age group (1,055,000 of 5,020,000).

- Black students as a percentage of total graduate enrollments fell between 1978 and 1982 to under 4 percent in the University and just over 5 percent in the State University. In the 1980 Census, Blacks made up 8 percent of those between 22 and 30 years of age in California (404,000 of 5,020,000).

- Both Black and Hispanic students represent a small proportion of the enrollments in engineering, computer science, biological and physical sciences, business administration, and letters in both segments.

6. Foreign students constitute a significant portion of graduate enrollments in several fields of study.

   - In 1982, foreign students received one-fourth of all doctorates and one-fifth of all master's degrees awarded by the University of California. In computer science and several engineering fields, over half of the doctorates went to foreign students. The high proportion of graduate degrees awarded to foreign students in these fields appears to have resulted not so much from increased numbers of such students but from declining numbers of domestic students.

7. Job prospects for graduate students in many disciplines remain uncertain.

   - In most of the liberal arts disciplines, prospects for academic employment for new Ph.D.s appear highly unfavorable for at least 10 more years. Efforts to expand non-academic opportunities for Ph.D.s in the humanities and social sciences have met with quite limited success.

   - In most of the liberal arts disciplines, the master's degree may have lost its value as a credential for employment.

INTRODUCTION

RATIONALE AND SCOPE OF THE REPORT

Several purposes underlie most graduate-level education and account for its significance to the social, economic, and intellectual life of California and the nation at large:

- Graduate programs exist to educate and credential scientists, scholars, and other professionals in all fields of knowledge.

- In the process, graduate programs not only preserve and transmit highly specialized knowledge but also produce new knowledge through research and refine existing knowledge through advanced scholarship.

- Graduate programs also establish standards for critical judgment, rational discourse, and intellectual performance across all fields of knowledge and professional practice.

These functions result directly in technological advances, economic development, and overall improvement in the quality of life of all Americans and contribute to the maintenance of a humane society and civilized existence.

During the past few years, these aims and functions of graduate education have been the subject of extensive discussion. In 1980, speakers addressed the "philosophy and future of graduate education" at a conference at the University of Michigan, and their papers were subsequently published in a book under that title by the University of Michigan Press (Frankena, 1980). In Fall 1981, "Graduate Education: Prospects for the Future" by William G. Bowen, President of Princeton, appeared in the Educational Record. In December 1983, the National Commission on Student Financial Assistance issued "Signs of Trouble and Erosion: A Report on Graduate Education in America." Almost simultaneously, the Carnegie Foundation for the Advancement of Teaching published Scholarship and Its Survival: Questions on the Idea of Graduate Education by Jaroslav Pelikan, Sterling Professor of History and former Dean of the Graduate School at Yale. Other books, articles, and special reports continue to appear on the subject.

This widespread attention has been prompted by several conditions which, taken together, promise to alter the direction graduate education has been taking for the past two or three decades and thus force a reconsideration of the assumptions that have shaped its development during this period:

- One condition is the current financial squeeze throughout higher education, which is especially acute at the graduate level where costs to both student and institution are proportionately highest and where federal research and fellowship funds have dwindled in the face of soaring instructional and equipment costs.

- An even more important condition, particularly in liberal arts disciplines, has been the job market for new faculty members -- the traditional career expectation of graduate students in most of these fields. Except

in a few subjects, this market has been so depressed for the past ten years that graduate enrollments were bound to suffer. Prospects for the immediate future look no brighter. In contrast, enrollments in a few engineering and business fields have been booming, and efforts to meet this demand without wrenching the curriculum out of shape and distorting the overall mission of universities call for administrative judgments of the most demanding kind.

For these and other reasons, a review of recent developments in graduate education in California seems timely.

This report, based largely on information in the Commission's files concerning enrollments and degrees awarded, presents a statistical record of California graduate education during the past six years and attempts to identify the major issues in graduate education that have public policy implications for the State. While it presents some national statistics for the sake of perspective, it focuses on California issues; and while it includes some data from California's independent institutions, it deals primarily with graduate education in the University of California and the California State University. Because the Commission's biennial reports on education in the health sciences cover issues of postbaccalaureate education in medicine, dentistry, and other health professions, this report concentrates on academic master's and doctor's degrees rather than what are called "first professional degrees."

The Commission's statistical information relating to enrollments and degrees awarded not only allows for a discussion of such program characteristics as growth or decline of enrollments, ratio of enrollments to degrees, degree production in relation to similar programs, but it also makes possible a description of student characteristics in relation to particular programs on individual campuses. For example, the age, sex, and ethnicity of students receiving degrees in chemical engineering throughout the University or State University can be compared over the past eight years. The present report, however, deals more extensively with program characteristics than student characteristics, except for a discussion of ethnic minority and foreign students in Part Four.

Because of the heavy emphasis on numbers throughout the report, it might appear that the Commission views the size of programs and the number of degrees they award as the primary measure of their importance. That is, of course, not its intention, since some essential fields of study will never attract large enrollments. Nevertheless, the size and changes in size of a program, especially in relation to other programs in the same field, are such basic consideration in program planning and review that careful attention to these facts needs no apology.

Admittedly, this report cannot deal in detail with all the issues that confront graduate education. Whether the substance and content of graduate programs are properly suited to present circumstances, whether there is too great an insistence on narrow original research at the expense of mastering broad areas of knowledge, whether pedagogical techniques receive too little attention in graduate programs for prospective teachers and faculty members, and whether graduate programs are evaluated by proper standards of quality by appropriate bodies -- all matters of great importance to the social,

intellectual, and economic future of the State and nation -- are beyond the scope of this report. The report does, however, attempt to provide a statistical foundation for informed discussion of these issues and for institutional decisions regarding them, in the hope of strengthening graduate education throughout California.

ONE

HISTORY AND PROSPECTS OF GRADUATE STUDY

GROWTH OF THE DOCTORATE NATIONALLY

Seen in relation to the 350-year tradition of baccalaureate education in this country, graduate education has a relatively short history. Even though a few European universities were awarding the doctorate as early as the fifteenth century, American colleges, based on the English model, restricted themselves to undergraduate education until Yale awarded the first Ph.D.s in this country in 1861 -- one in philosophy, one in physics, and one in classical languages. With a growing emphasis on professionalism in a wide range of occupations after the Civil War and the founding in 1876 of Johns Hopkins University as the nation's first full-fledged graduate institution, the stage was set for the emergence of graduate study as a standard function of American universities. Still, there was no strong rush into the pursuit of the American doctorate. By 1910, only about 8,000 doctoral degrees had been conferred in this country (National Center for Education Statistics, 1982, p. 131). Until 1917, many American students preferred to continue their graduate studies in German universities, and by then over 10,000 of them had returned to America with German Ph.D.s.

The German university tradition with its emphasis on broad examinations and a published dissertation came together with the credit-hour approach of American colleges to shape the doctorate as it became established in the United States. The move toward standardization of Ph.D. requirements was soon underway, with the Association of American Universities being founded in 1900 largely for this purpose. Shortly thereafter, the National Association of State Universities and the American Association of University Professors sought agreement on uniform degree standards; and by the end of World War I, residency, language, and dissertation requirements that would endure for over half a century had been established (Harris, Troutt, and Andrews, 1980, p. 5).

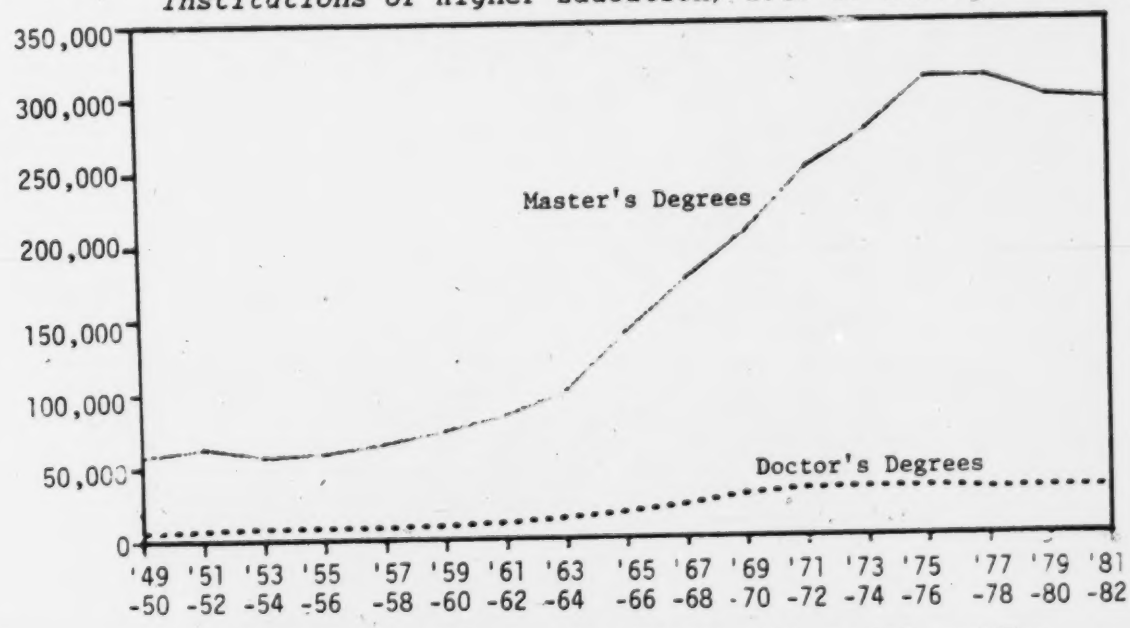
The emphasis in American doctoral programs from their earliest development has been on original research suitable for publication, even though the most common career outlet for a majority of Ph.D. recipients has been teaching at the undergraduate level. Increasingly, the Ph.D. has become the necessary credential for membership in the professoriate. At the same time, the intensive specialization evident in all areas of knowledge has caused new disciplines to seek to award the Ph.D. as an indication that they have come of age. As the so-called "applied" fields sought recognition within the academic community, they also pressed for their own degrees, with the result that by 1940, Ph.D.s were being awarded in such fields as agriculture, business, education, engineering, home economics, library science, nursing, and social work (Berelson, 1960, p. 27); and their recipients were taking jobs in government, industry, and other non-campus settings as well as in teaching.

These developments stirred considerable controversy among college and university faculties, some of whom felt strongly that the Ph.D. should remain an academic degree awarded only to those committed to lifelong scholarship in one of the traditional disciplines. Meanwhile, the nature and purpose of all doctoral degrees was being complicated as some professional fields began avoiding the "Doctor of Philosophy" label and issuing doctorates in their own subjects -- replacing the Ph.D. in Engineering, for example, with the Doctor of Engineering or "D.E." degree. Harvard had awarded the first Doctor of Education (Ed.D.) degree in 1920, and thereafter the gate was opened for a wave of new doctoral titles, including such present-day degrees as Doctor of Agriculture (D. Agri.), Doctor of Sacred Music (D.S.M.), Doctor of Science in Hygiene (D.S. Hyg.), and Doctor of Recreation (D. Rec.).

Despite this proliferation of degree titles, the prestige of the Ph.D. has held firm, causing professional doctorates in specialized fields to emulate the Ph.D. model. For example, the Ed.D. degree has for years differed from the Ph.D. in Education chiefly in having no foreign language requirement; and a 1971 survey of 113 institutions found only minor differences in the content and requirements of their Ed.D. and Ph.D. programs (Harris, Troutt, and Andrews, p. 11).

Even with the expanding number of doctoral titles, however, the number of doctoral degrees awarded did not increase greatly until the mid-1960s, as Figure 1 illustrates.

FIGURE 1 Earned Master's and Doctor's Degrees Conferred by American Institutions of Higher Education, 1949-50 Through 1981-82



Source: National Center for Education Statistics, 1982, p. 130; and The Chronicle of Higher Education, January 11, 1984, p. 18.

Enrollments were then soaring at every academic level, of course, but doctoral programs were increasing more rapidly than undergraduate programs, as evidenced by the increased ratio of new doctorates to B.A.s. By 1970, the nation's colleges and universities were awarding one doctorate for every 26 bachelor's degrees, compared to one for every 39 in 1960, and one for every 67 in 1950 (National Center for Education Statistics, 1982, p. 130, reproduced as Table 1 below).

TABLE 1 Earned Degrees Conferred by American Institutions of Higher Education, by Level of Degree, 1869-70 Through 1979-80

Year	Earned degrees conferred				
	All degrees	Bachelor's[1]	First-professional[1]	Master's[2]	Doctor's
1869-70	9,372	9,371	- - -	0	1
1879-80	13,829	12,896	- - -	879	54
1889-90	16,703	15,539	- - -	1,015	149
1899-1900	29,375	27,410	- - -	1,583	382
1909-10	39,755	37,199	- - -	2,113	443
1919-20	53,516	48,622	- - -	4,279	615
1929-30	139,752	122,484	- - -	14,969	2,299
1939-40	216,521	186,500	- - -	26,731	3,290
1941-42	213,491	185,346	- - -	24,648	3,497
1943-44	141,582	125,863	- - -	13,414	2,305
1945-46	157,349	136,174	- - -	19,209	1,966
1947-48	317,507	271,019	- - -	42,400	4,188
1949-50	496,661	432,058	- - -	58,183	6,420
1951-52	401,203	329,986	- - -	63,534	7,683
1953-54	356,608	290,825	- - -	56,788	8,995
1955-56	376,973	308,812	- - -	59,258	8,903
1957-58	436,979	362,554	- - -	65,487	8,938
1959-60	476,704	392,440	- - -	74,435	9,829
1961-62	514,320	417,846	- - -	84,855	11,622
1963-64	614,194	498,654	- - -	101,050	14,490
1965-66	709,832	519,804	31,236	140,555	18,237
1967-68	866,548	632,239	34,421	176,749	23,089
1969-70	1,065,391	792,316	34,918	208,291	29,866
1970-71	1,140,292	839,730	37,946	230,509	32,107
1971-72	1,215,680	887,273	43,411	251,633	33,363
1972-73	1,270,528	922,362	50,018	263,371	34,777
1973-74	1,310,441	945,776	53,916	277,033	33,816
1974-75	1,305,382	922,933	55,916	292,450	34,083
1975-76	1,334,230	925,746	62,649	311,771	34,064
1976-77	1,334,304	919,549	64,359	317,164	33,232
1977-78	1,331,536	921,204	66,581	311,620	32,131
1978-79	1,324,047	921,390	68,848	301,079	32,730
1979-80	1,330,244	929,417	70,131	298,081	32,615

[1] 1963-64 through 1983-84, first professional degrees are included with bachelor's degrees.
[2] Prior to 1965-66, some master's degrees in fields such as library science were reported as first-professional degrees and are not shown separately.
NOTE: Beginning in 1959-60, includes Alaska and Hawaii.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics* and *Earned Degrees Conferred* and unpublished data.

Source: National Center for Education Statistics, 1982 p. 130.

BEST COPY AVAILABLE

Several developments contributed to this dramatic increase in the number of doctorates awarded. The boom in undergraduate enrollments led to dire forecasts of an impending shortage of college instructors in virtually all fields of study. This concern prompted the federal government to enrich its graduate-level financial aid programs; it also inspired more institutions to expand into doctoral level work -- a course of action that usually met with little resistance, since doctoral instruction was not only an inducement for attracting new faculty but also a solid indication that the institution had arrived academically. Furthermore, the expansion of knowledge was accelerating -- the term "knowledge explosion" came into common use -- and graduate study, preferably at the doctoral level, was increasingly taken for granted as one measure of an individual's superior intellectual competence.

These and other conditions resulted in the number of doctorates increasing from 9,829 in 1959-60 to 18,237 in 1965-66 and 29,866 in 1969-70. Basing their projections on this rate of acceleration, most forecasters, including the late Allan Cartter, were confident that by 1980 the doctorates awarded annually would number between 50,000 and 70,000 (Maybew, 1970, p. 1). Few forecasts have been further from the mark. The number of doctorates peaked in 1972-73 at 34,777 and has slowly declined since then, slipping to 32,707 in 1981-82. Since 1975, close to 8,000 or roughly one-fourth of all doctorates granted each year have been in education, a number which, combined with increases in a few fields, has kept the total relatively steady despite significant declines in many of the liberal arts disciplines. Graduate enrollments in these disciplines have fallen off even more severely than the number of their doctorates awarded during the past decade, suggesting that the total decline in doctorates will continue for some time.

THE DOCTORATE IN CALIFORNIA

The University of California awarded its first doctorate in 1885 and Stanford granted its first in 1894. Berkeley and Stanford were the only doctoral-level institutions in California until the 1920s when they were joined in 1920 by the California Institute of Technology and in 1927 by the University of Southern California. The Claremont Graduate School awarded its first doctorate in 1937, and UCLA moved into doctoral programs at approximately the same time. Through the Master Plan of 1960, the State Colleges were authorized, under limited conditions, to award joint doctorates with campuses of the University of California. By 1982, doctorates were being awarded by all nine campuses of the University, three campuses of the State University, 39 accredited independent institutions in California, and at least 70 unaccredited institutions.

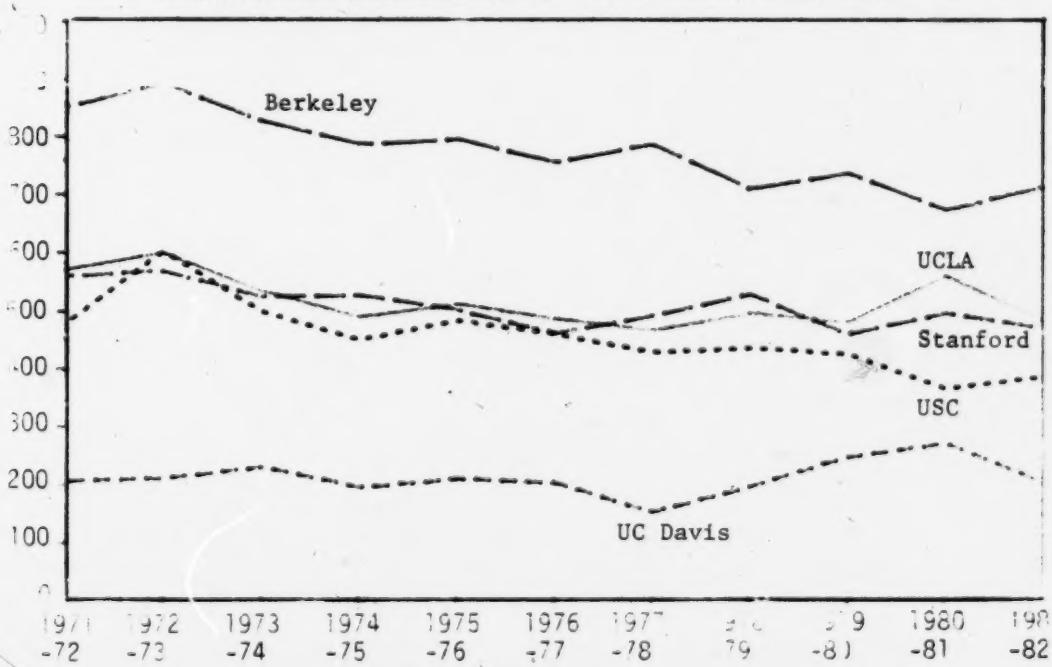
As early as the 1920s, Berkeley was awarding degrees in all ten of the broad disciplinary categories listed by the National Research Council, and by the 1950s it offered doctoral programs in 22 of the 24 categories. (National Research Council, 1963, p. 20; 1968, p. 16.) Since 1976, it has led all institutions in the country in the number of doctorates awarded.

As can be seen from Table 2 on page 10, over the entire decade of the 1970s, while Berkeley ranked first nationally in the number of doctorates granted, UCLA ranked twelfth, Stanford thirteenth, and USC sixteenth, respectively. The only other California university among the nation's largest producers of doctorates during that decade was the University of California at Davis, which ranked fifty-sixth. The number of doctorates awarded by each of these five California institutions over the past decade is depicted in Figure 2 below.

California's major institutions have achieved not only quantity but a reputation for quality as well, with Berkeley and Stanford scoring at or near the top in overall national ratings of graduate programs since the 1960s, UCLA in the top ten, and Cal Tech near the top in selected disciplines. What is particularly impressive about the showing of Berkeley, Stanford, and UCLA in these surveys is the broad range of disciplines in which they have achieved a reputation for high quality.

As new campuses of the University of California were established after World War II, the issue arose of the extent to which each should be patterned on Berkeley and UCLA as major research and wide-ranging graduate-level institutions. In its 1967 Academic Plan the University confirmed the wishes of

FIGURE 2 Earned Doctor's Degrees Conferred by Five Major California Universities, 1971-72 Through 1981-82



Source: Table 3, and National Center for Education Statistics, 1983, p. 134.

BEST COPY AVAILABLE

BEST COPY AVAILABLE

TABLE 2 Doctor's Degrees Conferred by Sixty Large Institutions of Higher Education, 1970 Through 1979-80

	Rank order	Total 1970-71 to 1979-80	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
University of California at Berkeley	1	7,808	759	848	831	825	785	794	751	766	709	736
University of Wisconsin	2	7,799	915	796	836	848	853	828	700	685	688	850
University of Illinois	3	7,530	870	874	800	806	789	748	714	590	652	597
University of Michigan	4	7,080	839	798	751	743	722	688	705	635	660	569
Columbia University (New York)[1]	5	7,045	705	841	786	750	652	697	706	630	585	630
Ohio State University	6	6,432	676	750	715	653	634	678	598	587	575	566
Harvard University (Massachusetts)	7	5,973	612	626	744	578	557	620	625	560	533	513
Michigan State University	8	5,632	731	633	666	565	603	535	504	437	484	474
Indiana University	9	5,482	623	608	597	609	590	581	498	439	488	451
University of Minnesota	10	5,329	612	599	557	572	539	494	511	493	466	485
New York University	11	5,263	574	608	725	569	492	539	423	437	458	438
University of California at Los Angeles	12	5,186	573	568	597	532	487	509	484	465	495	479
Stanford University (California)	13	5,185	582	557	566	522	524	499	460	490	527	458
University of Texas	14	5,005	468	523	514	522	561	535	542	453	455	432
Cornell University (New York)[1]	15	4,712	521	476	531	496	466	487	449	487	415	402
University of Southern California	16	4,668	453	475	600	497	448	481	458	427	435	424
Purdue University (Indiana)	17	4,293	408	493	441	454	467	420	378	381	374	387
Massachusetts Institute of Technology	18	4,125	400	416	396	480	409	390	379	425	361	387
Pennsylvania State University	19	4,094	436	521	424	376	404	458	400	340	370	365
University of Chicago (Illinois)	20	4,035	434	448	468	456	440	405	380	370	328	296
University of Pittsburgh (Pennsylvania)	21	3,820	326	374	419	410	422	368	365	384	380	383
University of Pennsylvania	22	3,738	378	441	402	412	358	422	322	335	331	335
University of Washington	23	3,723	432	379	448	382	386	365	330	310	342	351
University of Maryland	24	3,647	339	402	384	343	400	389	399	334	387	310
Northwestern University (Illinois)	25	3,482	404	370	392	388	393	333	301	292	301	308
University of Michigan	26	3,432	361	405	406	405	364	372	352	226	287	254
Florida State University	27	3,398	314	364	383	358	381	300	324	303	343	370
Yale University (Connecticut)	28	3,347	345	348	352	358	369	348	300	322	323	286
Rutgers, The State University (New Jersey)	29	3,261	233	305	319	292	353	335	395	339	387	320
University of Iowa	30	3,195	389	343	347	311	330	324	274	297	306	274
University of Massachusetts	31	3,118	263	236	344	332	331	334	332	348	316	282
University of North Carolina at Chapel Hill	32	3,079	278	315	317	332	332	299	305	264	300	307
University of Florida	33	3,049	303	300	260	273	353	349	319	298	313	281
University of Georgia	34	2,800	256	293	312	299	297	288	258	277	252	268
University of Tennessee	35	2,756	286	282	321	332	298	260	277	231	251	218
University of California	36	2,711	252	301	466	299	288	292	303	259	241	212
Boston University (Massachusetts)	37	2,604	214	225	291	226	286	288	243	259	274	338
University of Oregon	38	2,502	260	343	336	278	295	260	239	182	198	201
University of Kansas	39	2,568	260	241	247	288	287	242	229	263	252	279
Texas A&M University	40	2,537	215	240	241	234	268	243	287	262	257	290
Iowa State University of Science and Technology	41	2,453	311	277	287	247	207	228	222	208	227	239
Syracuse University (New York)	42	2,403	257	267	295	258	230	237	235	219	213	192
State University of New York at Buffalo	43	2,360	249	217	274	217	238	253	213	227	238	234
Princeton University (New Jersey)	44	2,375	255	252	216	259	252	247	223	224	242	195
Nova University (Florida)	45	2,351	1	3	- - - -	10	282	476	378	352	399	447
University of Arizona	46	2,281	245	212	209	216	219	215	236	232	217	259
University of Virginia	47	2,246	226	181	209	237	239	241	225	231	228	229
University of Utah	48	2,196	238	279	224	232	245	207	215	181	168	208
Temple University (Pennsylvania)	49	2,187	145	193	320	166	251	208	227	269	237	260
Johns Hopkins University (Maryland)	50	2,165	213	212	251	236	241	217	198	218	196	184
Wayne State University (Michigan)	51	2,125	209	223	259	216	220	213	207	183	197	194
University of Nebraska	52	2,100	222	208	204	237	219	177	216	198	189	206
Ohio University (North Carolina)	53	2,088	220	237	193	222	217	209	204	209	175	202
Case Western Reserve University (Ohio)	54	2,076	307	245	236	220	207	175	184	165	156	158
Columbia State University	55	2,066	218	230	240	214	213	200	175	203	199	193
University of California at Davis	56	2,026	132	203	208	208	193	208	201	151	195	247
University of Oklahoma	57	1,940	224	241	240	219	249	195	198	128	148	139
University of Rochester (New York)	58	1,913	203	188	206	210	199	163	190	174	199	191
University of Connecticut	59	1,893	158	204	176	191	193	217	200	186	191	194
Louisiana State University	60	1,783	221	253	186	221	182	147	158	132	146	141

[1] Includes M.D. degrees conferred by the Male Division and Teachers College.
[2] Includes degrees conferred by the Engineering and Statutory Colleges.

SOURCE: U.S. Department of Education, National Center for Education Statistics, special tabulations from the survey of *Earned Degrees Conferred*.

Source: National Center for Education Statistics, 1982, p. 134.

these new campuses that all but San Francisco were to be regarded as "general campuses."

Although never precisely defined, this term was commonly interpreted to apply to the Berkeley-UCLA model of education, whereby the campuses were free to expand their range of graduate programs more or less as local circumstances dictated. Spurred on by the national concern over an impending shortage of Ph.D.s and the need to promise doctoral programs as a recruiting device for new faculty, the new campuses soon offered Ph.D. programs in most of the basic disciplines. As supply and demand conditions began to change in the 1970s, California found itself, as did many other states, with excess capacity for producing doctorates in most fields of study. The issues posed by this condition will remain as high priority questions in statewide planning and coordination for the remainder of this decade.

GROWTH OF THE MASTER'S DEGREE NATIONALLY

If doctoral programs in American universities have occasioned some questions and controversy, the nation's master's programs have remained even more unsettled and confused. Throughout much of its history, the master's degree has suffered from a lack of agreement on content and requirements. Only late in the 19th century did it begin to establish an identity after having previously been conferred upon those, as the U.S. Commissioner of Education put it in 1872, who "three years after graduation . . . are engaged in literary or professional pursuits and who pay to their college a fee prescribed by its regulations" (Furniss, 1973, p. 1772). These regulations typically could be summarized as "keeping out of jail for three years and paying the five-dollar fee" (Mayville, 1972, p. 4).

Since then, the master's degree in some disciplines has acquired the reputation of being a consolation prize for those unable to complete the doctorate; in others, such as the fine and performing arts, it has become a genuine terminal degree with high standards established and maintained by a national accrediting body. Like the doctorate, it has experienced an enormous proliferation of nomenclature, until today there are more than 150 different master's degrees offered in the United States. This vast array of degree programs, most of them in technical or occupational fields, contributes to the confusion of standards and thus to the uncertain academic significance of the degree at the present time.

One of the perennial issues concerning the master's degree during this century has been the extent to which it should be regarded as a research-oriented degree. In most universities and many of the liberal arts disciplines, it came to be viewed as a steppingstone to the Ph.D., and its requirements reflected this concept by commonly including a reading knowledge of at least one foreign language and the writing of a thesis based on original research. Another school of thought, however, has attempted to differentiate the master's from the doctorate, as the John Hopkins Board of Trustees did

early in this century by declaring that the master's was not an investigative degree (Mayville, p. 3). The tension between these two points of view continues to characterize master's-degree programs to the present day, as illustrated by its status in teacher preparation.

Before the master's was adopted by a broad range of technical and professional fields, it was primarily identified as a teacher's degree, since a majority of its recipients have probably been school teachers and administrators. A 1939 survey indicated that three-fourths of all liberal arts master's degrees then being earned in the United States were being awarded to public school teachers (Mayville, p. 3). By 1960, almost one-half of all the master's degrees awarded were in the field of education, and each year since then at least one-third have been. Despite the recent surge of master's degrees in business, they were still outnumbered in 1982 by those in education -- 93,000 to 61,000 (National Center for Education Statistics, 1982, p. 130).

Growth in the number of master's degrees awarded in this country has paralleled that of bachelor's and doctoral degrees, although by 1977 the master's had achieved its height of relative popularity. The number of master's degrees awarded that year peaked at 317,164, representing roughly one master's for every three bachelor's degrees, compared to one for every seven in 1950, when 58,000 master's degrees were awarded. By 1982, the number of master's degrees awarded declined to 295,546, and judging from current enrollments, it is likely to drop even further (National Center for Education Statistics, 1982, p. 130).

The future of the master's degree in a great many disciplines is highly uncertain. Damaged by the overall degree inflation of the past ten years, devalued by surpluses in some of its most popular professional fields, lightly regarded in most academic circles, and serving primarily to certify supplemental training beyond what students receive as undergraduates but with little expectation that they will reach the frontiers of knowledge in that field or make significant contributions in the form of original research, the master's degree is in need of an across-the-board reexamination heretofore reserved only for the doctorate and, occassionally, the baccalaureate.

THE MASTER'S DEGREE IN THE CALIFORNIA STATE UNIVERSITY

Following a sequence -- but not necessarily a chronology -- similar to that in most states, the campuses of the now California State University evolved from normal schools to teacher's colleges in 1921 and then to state colleges in 1935. By the late 1940s, several of them were primed to offer graduate degrees. Accepting the recommendations of the 1948 Strayer Committee Report that State Colleges be authorized to grant the master's degree, the Legislature granted that authority shortly thereafter. By 1955-56, the ten existing State College campuses were awarding over 1,200 master's degrees a year -- 15 percent of all the degrees they granted (Chancellor's Office, 1967, Section F, p. 2). Their number of master's degrees increased steadily into the 1970s augmented by graduates of newly established campuses that moved almost immediately into graduate-level instruction. The high point was reached in 1978, when the campuses awarded 10,146 master's degrees, almost

19 percent of all their degrees. Since then, the number has dropped to between 9,500 and 9,700 a year, sustained at that level largely by the pronounced rise in the number of degrees in business. Similar to the national pattern during the past two decades, between 30 and 40 percent of all master's degrees granted by the State University have been in education, with the percentage falling off slightly since 1978.

In contrast to the University of California, graduate enrollment in the State University has always been overwhelmingly part time, varying from 85 percent in 1960 to 69 percent in 1970 and up to 78 percent in 1980 (Chancellor's Office, 1982, p. 110.1).

With a reduced demand for public school teachers and a general oversupply of Ph.D.s in most fields, enrollments in many State University master's programs have declined drastically during the past five years. Statistical evidence of the decline appears throughout this report. What steps, if any, should be taken in response to this development constitutes one of the most important and difficult questions in current statewide higher education planning.

THE FUTURE MARKET FOR GRADUATE DEGREE HOLDERS

Even though love of a subject and a desire for mastery still directs students to graduate study, recent economic realities have forced many beginning graduate students to give the job market and career advancement primary consideration in their educational decisions. Certainly, graduate enrollments during the 1980s have been heavily influenced by perceptions of where the jobs are, or -- for those already employed -- by what further study is required for advancement. The grim prospects facing many graduate students who aspire to college-teaching positions can be readily documented by the hundreds of applications submitted for the few announced openings each year in English, for example, or history or sociology. Thus the condition of graduate education is directly tied to the job market, and any discussion of trends in graduate education must take employment prospects into account.

The future employment market for holders of graduate degrees has been notoriously difficult to forecast and job prospects can change significantly during the time it takes students to complete their program, depending as these prospects do on a whole range of uncertain circumstances. The non-academic market for graduate degree recipients in the humanities and social sciences is especially difficult to measure. The size of the college student population, somewhat more predictable than other determinants of academic employment prospects, is still subject to the uncertainties of college-going rates, recruitment of non-traditional students, student-aid policies, and other circumstances. In addition, the availability of research funds, itself a function of shifting federal priorities and the general health of the economy, has a major impact on employment opportunities, especially for graduates in the sciences.

Despite such conditions that make forecasting difficult, there is virtually unanimous agreement that the market for college teachers -- traditionally, the major market of new doctorates -- will remain depressed in all but a few

fields for at least another decade. According to William G. Bowen, President of Princeton University, "the outlook for academic employment over the next fifteen years can only be described as bleak" (1981, p. 20). "It is clear," Bowen argues, "that at no time during this period will the total demand for Ph.D.s in academe come close to matching the corresponding supply of Ph.Ds" (p. 23). And in a national study of humanities doctorates by Dorothy Harrison, Ernest May, and Lewis Solmon, they estimated that "all jobs in English, including those in Community Colleges, during the 1980s could be filled by the Ph.D.s that will issue from 15 institutions. All jobs in philosophy could be filled by the products of ten institutions; all jobs in history by the products of six institutions: Columbia, Wisconsin, Harvard, Berkeley, Chicago, and Yale, leaving no jobs for Ph.D.s from Michigan, Stanford, Penn, Princeton, Cornell, Duke, Johns Hopkins, etc." (Frankena, 1980, p. 196).

One of the best measures of current job prospects is the annual survey of Ph.D. recipients by the National Research Council, which asks the employment status of graduates at the time of completing their degrees.

Since 1976, the percentage of new Ph.D.s in all fields still seeking appointments at graduation has averaged about 25 percent. In some fields, however, the percentage is much higher -- as of 1982, 40 percent in anthropology, 34 percent in history, 32 percent in both foreign languages and English, and 29 percent in philosophy, compared to only about 10 percent in those fields 15 years earlier (National Research Council, 1982, pp. 16-21). Among the 1982 Ph.D.s whose field of study was reported, the smallest percent still seeking appointments at graduation were those in chemistry (16 percent) and economics (15 percent). Although not reported, the percentage of those in business administration and computer sciences was probably smaller still.

The National Research Council survey is also valuable as an indication of how alternatives to college teaching have been developing during the past ten years. The number of Ph.D.s finding employment in business and industry has almost doubled in the last decade -- from 1,896 in 1972 to 3,467 in 1982, although this latter number represented only 11 percent of all Ph.D. recipients in 1982. As might be expected, opportunities in business and industry are greatest for graduates in engineering and the physical sciences. Roughly one-third of all 1982 Ph.D.s in engineering and chemistry found employment in private industry. The proportion of new Ph.D.s taking jobs in the government has remained relatively stable for the past 25 years, averaging between 5 and 7 percent of all degree recipients (pp. 8-10).

Despite efforts to extend employment opportunities beyond the campus for doctorates in the humanities, graduates in these disciplines remain heavily dependent on academic appointments for employment. In 1981, 83 percent of the 68,000 humanities Ph.D.s then employed were at work in colleges and universities. Faced with a dearth of academic positions, a growing number of recent humanities Ph.D.s are employed in non-academic settings. Of those who received degrees between 1977-1980, 25 percent were so employed, whereas only 6 percent of the 1960-64 group held other than academic positions. But a majority of the recent graduates indicate that they took these non-academic jobs because they were unsuccessful in finding college teaching positions (National Research Council, 1983, pp. 60-61). Unless the content of doctoral programs in the humanistic disciplines is drastically altered -- and even this will not guarantee employability -- it seems unlikely that the demand for graduates of these programs will improve soon.

The most conspicuous trend in the career patterns of new doctorates in the sciences is toward postdoctoral study and research. In biochemistry, for example, 63 percent of the 1982 Ph.D.s had definite plans for postdoctoral study; in the other biological sciences, 49 percent; and in physics and chemistry, 33 percent. Conversely, the percentage of new Ph.D.s in these fields planning to move directly into college teaching is surprising low -- 5 percent in biochemistry, 12 percent in the other biological sciences, 9 percent in physics, and 7 percent in chemistry.

In most disciplines, however, postdoctoral study is not a viable option. Less than 1 percent of the 1982 Ph.D.s in English, for example, indicated such plans. Graduates in the other humanities and social science disciplines are only slightly more likely to engage in postdoctoral research -- an important reason being that properly remunerative grant opportunities are simply not available to them.

Doctoral recipients in education have a career outlet considered only as a last resort by those in most other fields: elementary and secondary schools. Roughly 20 percent of all doctorates in education have been employed at the elementary or secondary level since 1960, although the percentage has been slightly lower during the past few years. Of the 1982 doctorates in education, only 32 percent found positions in colleges and universities, down from 50 percent in 1970 (National Research Council, 1982, p. 21).

In general, therefore, the experience of recent Ph.D. recipients offers little hope that a significant non-academic demand for doctorates, except in engineering and a few sciences, can be developed. That few Ph.D.s are literally unemployed cannot obscure the fact that the doctoral program as currently structured is designed to train scholars and research specialists in an academic discipline and the most suitable career outlet remains a college or university appointment in that discipline. If compelled by circumstances to take a job in another field or in a setting outside the college or university, some Ph.D.s have adjusted with notable success, but the assignment is seldom in complete harmony with the graduates's primary professional interests or with the nature of preparation provided by the program. Even with the recent declines in graduate enrollments in a broad range of disciplines, supply and demand in the Ph.D. labor market promises to remain abnormally out of balance for the next five to ten years.

TWO

RECENT TRENDS IN GRADUATE ENROLLMENTS AND DEGREES

GRADUATE ENROLLMENTS DURING THE PAST DECADE

Not counting first-professional-degree students in such fields as medicine, dentistry, and law, graduate enrollments in American colleges and universities peaked in Fall 1980 at 1,344,073, having grown by 19.6 percent in the seven years since 1973. As of Fall 1982, these national enrollments had fallen off by 1.6 percent to 1,322,293 students -- leaving an overall increase over the ten-year period of 17.7 percent.

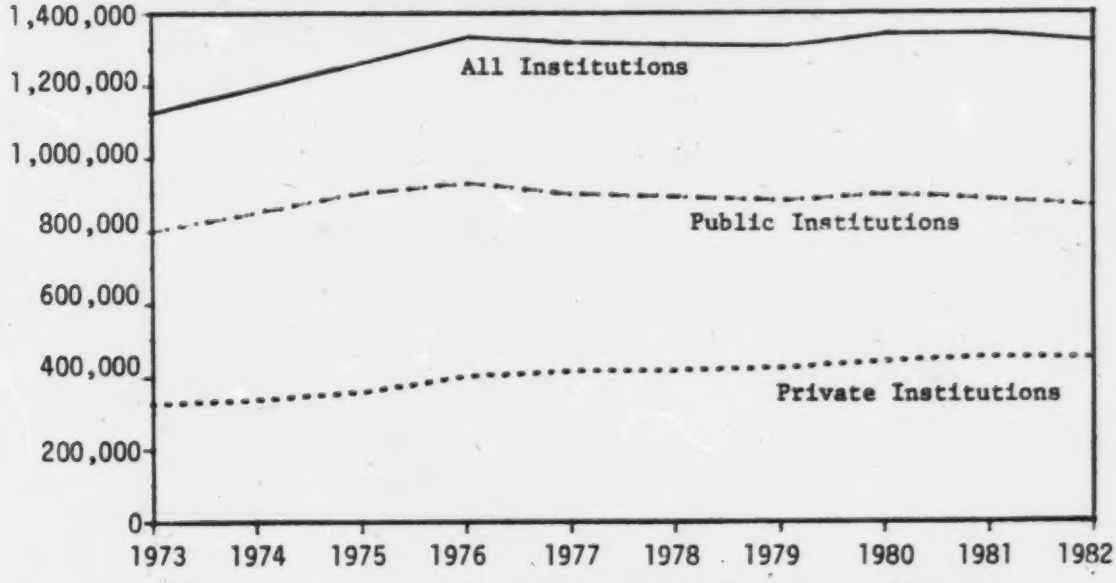
As can be seen in Figure 3 on page 18, graduate enrollments in the nation's public colleges and universities peaked in 1976 and have remained relatively stable since then. In contrast, graduate enrollments in America's private or independent institutions continued to grow until the last year of the period -- increasing 39.6 percent during the decade, in comparison to only 8.1 percent at public institutions. As a result, the proportion of graduate students enrolled in public institutions has declined from 71.1 percent of the total in Fall 1973 to 65.8 percent by the Fall 1982.

During the same ten years, graduate enrollments in California's accredited institutions continued to grow, as Figure 4 shows: from 121,796 in Fall 1973 to 150,834 in Fall 1982. Despite slight declines in 1976 and again in 1979, California's graduate enrollments increased 23.8 percent over the period.

Graduate enrollments in the California State University peaked in 1977, while those at the University of California have remained relatively stable and increased slightly. Combined graduate enrollments in the University and the State University totaled 88,265 in 1973 and 90,834 in 1982 -- an increase of 2.9 percent. But their proportion of California's total graduate enrollments dropped from 69.5 percent to 60.2 percent over the period, since graduate enrollments in California's independent colleges and universities increased by 61.5 percent, due in part to the creation of new graduate-level independent institutions and in part to the expansion of existing programs. The additional institutions accounted for a relatively small portion of this increase. Of the 27 institutions newly accredited by the Western Association of Schools and Colleges since 1973, only 12 offer graduate degrees -- all in a quite limited range of fields, several in theology alone. Among the reasons for the dramatic growth of independent graduate school enrollments are the following:

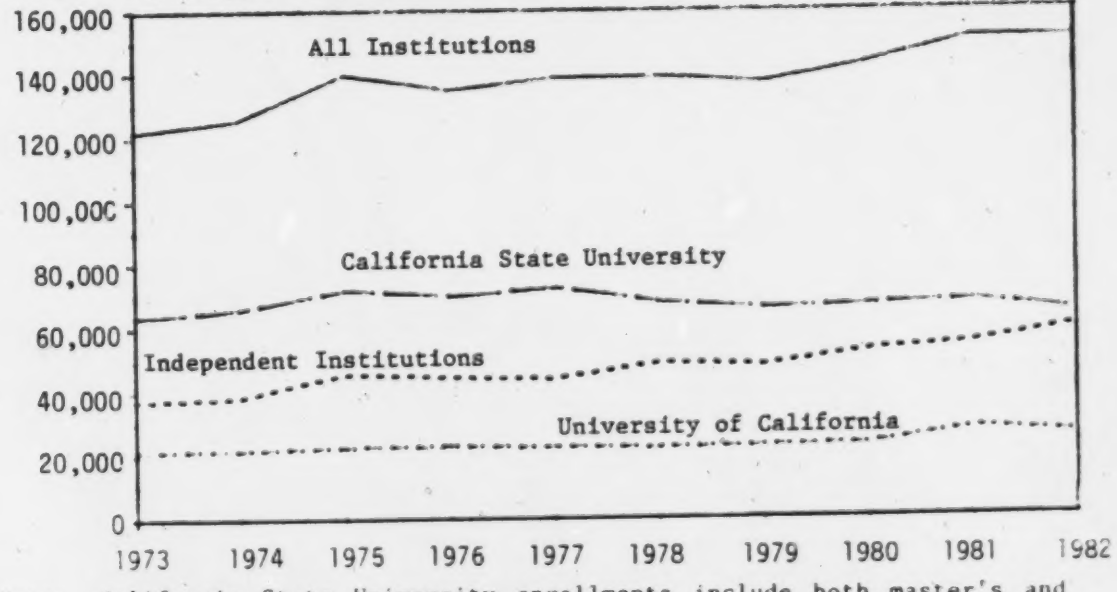
- They make it possible to pursue the doctorate part time, and many of them tailor the scheduling of all their graduate offerings to the convenience

FIGURE 3 Graduate Enrollments in American Institutions of Higher Education, Fall 1973 Through Fall 1982



Source: National Center for Education Statistics, 1983, p. 93.

FIGURE 4 Graduate Enrollments in Accredited California Institutions of Higher Education, Fall 1983 Through Fall 1982



Note: California State University enrollments include both master's and postbaccalaureate students. University of California enrollments through 1981 do not include interns and residents. Data on independent institutions are from 86 in 1973, 91 in 1974, 99 in 1975, 87 in 1976, 92 in 1977, 102 in 1978, 106 in 1979, 118 in 1980, 117 in 1981, and 118 in 1982.

Source: California Postsecondary Education Commission.

of the students. Enrollments at these institutions have thus become increasingly part time.

- Some independent institutions make far more aggressive use of the media for recruitment than any public university.

- Some -- by no means all -- have less demanding standards for admission and retention than public institutions.

- And many restrict their offerings to a highly limited range of programs, often in such popular fields of study as business, education, and psychology. (Over one-fifth of all Ph.Ds in psychology awarded nationally in 1982 were granted by independent institutions in California.)

Whatever the causes for the increasing share of graduate enrollments in independent colleges and universities, it is a development that must be taken into account in statewide planning.

Despite the steady demand for graduate education in the public institutions, graduate enrollments as a proportion of total public enrollments have gradually declined in both the University and State University since the early 1980s (Table 3, page 20). In the University of California, the percentage of graduate students dropped from nearly 30 percent in 1962 to about 20 percent in 1982, while in the State University the change was less severe, from 23 percent to just over 20 percent. In both cases, the smaller proportion of graduate students has resulted primarily from increases in undergraduate enrollments, although reduced demand for graduate study in a number of liberal arts disciplines has also had some effect.

While neither segment has ever announced a desired ratio of undergraduate to graduate enrollments, the unexpectedly heavy demand for undergraduate admissions to the University of California during the past three or four years has raised a question about the appropriate distribution of effort in a segment whose primary mission is graduate education and research. In its most recent graduate enrollment plan issued in October 1983, the University recognized the declining proportion of graduate students among its total enrollment and requested State funding for an additional 800 graduate students over a three-year period. Since these positions are to be distributed for the most part to the smaller campuses, the situation at Berkeley and UCLA where undergraduate demand is heaviest will not be affected by any graduate student increases authorized in the 1984-85 budget.

While total graduate enrollments in the California State University have remained relatively stable during the past ten years, they have been more volatile in their distribution among disciplines and have involved more pronounced changes in student characteristics than those in the University of California. These conditions will be discussed in more detail later in this report. Here it is worth noting the significant decline in the enrollment of men in State University graduate programs over the past decade -- from 33,436 to 27,564, compared to a somewhat greater increase in the number of women -- from 30,067 to 37,113. A similar pattern is evident in the

BEST COPY AVAILABLE

TABLE 3 Enrollments at Accredited California Colleges and Universities by Level, Sex, and Full-Time and Part-Time Status of Students, Fall 1973, Fall 1978, and Fall 1982

Segment	Fall 1973 Men	Fall 1973 Women	Fall 1973 Total	Fall 1978 Men	Fall 1978 Women	Fall 1978 Total	Fall 1982 Men	Fall 1982 Women	Fall 1982 Total
UNIVERSITY OF CALIFORNIA									
Undergraduate	46,764	38,517	85,281	47,229	42,937	90,166	50,769	49,612	100,381
Percent	(54.8)	(45.2)		(52.1)	(47.9)		(50.4)	(49.6)	
Full-Time			80,602			83,581			92,657
Part-Time			4,679			6,585			7,724
Graduate	17,302	7,480	24,782	16,203	9,182	25,385	16,135	10,022	26,157
Percent	(69.8)	(30.2)		(63.8)	(36.2)		(61.6)	(38.4)	
Full-Time			23,185			23,630			24,411
Part-Time			1,597			1,755			1,746
CALIFORNIA STATE UNIVERSITY									
Undergraduate	127,774	95,356	223,130	121,856	116,404	238,260	123,029	128,108	251,137
Percent	(57.3)	(42.7)		(51.1)	(48.9)		(49.0)	(51.0)	
Full-Time			162,052			167,752			180,894
Part-Time			61,078			70,508			70,243
Graduate	33,436	30,067	63,503	30,712	37,203	67,915	27,564	37,113	64,677
Percent	(52.7)	(47.3)		(45.2)	(54.8)		(42.6)	(57.4)	
Full-Time			16,991			15,065			14,677
Part-Time			46,512			52,850			50,000
INDEPENDENT									
Undergraduate			80,273	53,555	47,937	101,492	48,111	46,674	94,783
Percent				(52.8)	(47.2)		(50.8)	(49.2)	
Full-Time						84,861			88,252
Part-Time						16,631			6,531
Graduate			37,149*	37,790	18,427	56,217	36,917	23,083	60,000
Percent				(67.2)	(32.8)		(61.5)	(38.5)	
Full-Time						25,855			23,631
Part-Time						30,362			36,369

Note: The 1973 data on independent institutions are based on 86 colleges and universities, the 1978 data on 97; and the 1982 on 118.

Source: California Postsecondary Education Commission.

University of California and the independent institutions, but in neither of these segments is the reduction in actual numbers of male graduate students so apparent.

The other notable difference between graduate enrollments in the two public segments, as illustrated in Table 3, is in the full-time, part-time category. The University has maintained a consistent full-time enrollment of between

93 and 94 percent among its graduate students aided partly by counting many doctoral students at the dissertation stage as full time. The State University's graduate enrollments have always been predominately part time, ranging from 73 to 78 percent during the past decade.

GRADUATE DEGREES AWARDED DURING THE PAST HALF-DECADE

More important for most purposes than total enrollments is the distribution of those enrollments among disciplines. The most reliable indication of how enrollments have been divided among the various fields of study is a record of actual degrees awarded. This section of the report examines the relative distribution of graduate degrees awarded during 1977-78 and 1981-82, first nationally and then in California, in 21 major disciplinary categories.

These categories constitute 21 of the 24 used until recently by the National Center for Education Statistics of the U. S. Department of Education to classify academic subdivisions of knowledge and training. (Not included are the three categories of law, military sciences, and theology.) The 21 are characterized as follows (National Center for Education Statistics, 1970, pp. 7-10.)

- Agriculture and Natural Resources, including fields such as agriculture, agronomy, animal science, horticulture, agricultural economics, forestry, and range management, having to do with the production of food and management of natural fiber, plant, forest, and wildlife resources.

- Architecture and Environmental Design, including interior design, landscape architecture, city and regional plannning, and other programs preparing students for a profession in designing buildings, communities, parks, or other aspects of the environment.

- Area Studies in such fields as American, African, Asian, European, Islamic, Latin American, and Slavic studies that are designed to study cultures indigenous to specific geographic regions.

- Biological Sciences, including bacteriology, general biology, general botany, ecology, genetics, microbiology, and physiology having to do with the science of the origin, growth, reproduction, and structure of life forms.

- Business and Management, including accounting, banking and finance, business management and administration, marketing and purchasing, real estate, and transportation, related to the administration, control, operation and organization of public and private organizations.

- Communications, including advertising, journalism, and radio/television, involving the collection, preparation, and presentation of ideas and information through mass media.

- Computer and Information Sciences, including data processing, computer programming, system analysis, and information sciences and systems dealing with data storage, manipulation, and computation.

- Education, including elementary, secondary, higher, adult, and special education; the methodology and theory of teaching various fields, and other programs related to the administration and control of educational organizations and to instructional services within and outside of educational institutions.

- Engineering, including aerospace, agricultural, biomedical, chemical, civil, electrical, mechanical, nuclear, naval, and textile engineering related to the design, production, and operation of systems for using and controlling the natural environment.

- Fine and Applied Arts, including applied design, art (painting, drawing, and sculpture), art history, cinematography, dance, dramatic arts, and music involving the creation and appreciation of stylized visual and nonvisual representations and symbols.

- Foreign Languages, including Latin and Classical Greek.

- Health Professions, including hospital and health care administration and all specialities having to do with the maintenance and restoration of physical and mental health, (expect in this report for first-professional degree programs in dentistry, medicine, osteopathic medicine, podiatry, and veterinary medicine)

- Home Economics, including clothing and textiles, consumer economics, child development, family relations, foods and nutrition, and institutional food management, including the science of foods and child, family, and home care.

- Letters, ranging from English through comparative literature, creative writing, linguistics, speech, philosophy, and the teaching of English as a foreign language, involving literature and value systems related to ancient and modern cultures.

- Library Science, involving preparation for professional work in libraries and related agencies.

- Mathematics, including applied mathematics and statistics having to do with the science of numbers and space configurations.

- Physical Sciences, ranging from astronomy and astrophysics through chemistry, geology, geophysics, metallurgy, oceanography, paleontology, and physics, related to the basic nature of matter, energy, and associated phenomena.

- Psychology, including counseling and social psychology dealing with behavioral and mental processes.

- Public Affairs and Services, including community services, law enforcement and corrections, public administration, and social work related to the management and operation of government agencies.

- Social Sciences, ranging from anthropology and archaeology through economics, geography, history, political science and government, and sociology, dealing with the past and present activities, interaction, and organization of human beings.

- Interdisciplinary Studies, involving more than one major discipline without primary concentration in any one area.

Master's Degrees Awarded by Major Field of Study in the United States

Not only has the total number of master's degrees awarded in the United States declined each year since 1977-78, but the distribution of these degrees among fields of study has shown surprisingly pronounced changes during the relatively brief period between 1977-78 and 1981-82. Table 4 on pages 24-25 indicates the number of master's degrees and the percentage of the total conferred in the major discipline categories for these years, the number and percentage of degrees to men and women, and the change between the two years for each major field of study. Figure 5 on page 26 shows the change in numbers for these fields over these five years.

Differences Among Fields: It is common knowledge that students in large numbers have recently been moving into certain fields of study and out of others. Still, the magnitude of the changes in the numbers of master's degrees awarded in various disciplines -- as one indication of these enrollment shifts -- remains impressive. The right-hand column in Table 4, "Percent Change Between 1977-78 and 1981-82," reveals that in ten or amost half of all discipline categories, gains or losses of more than 15 percent in the number of degrees granted have occured since 1977-78. That degrees in a currently popular field such as computer science should increase by 62 percent is of course significant but not especially surprising since the base was relatively small. It is the level of change in some of the traditional, longer-established disciplines that attracts attention.

In sheer numbers, the gain of 27 percent in master's degrees in business and the decline of 32 percent in education are conspicuous. While the largest share of all master's degrees conferred in the country is still in education, the portion in business has been steadily gaining. More than half of all master's degrees awarded in 1982 were in these two fields.

The declining number of degrees in the humanities and social sciences -- much publicized at the baccalaureate level -- is equally apparent at the master's level, although not quite so extreme. The field of letters, consisting of English, philosophy, comparative literature, and classics, among others, continued in a decline that began in the early 1970s. The number of master's degrees in these disciplines fell another 18 percent between 1978 and 1982, until only 2.3 percent of all master's degrees are in these subjects.

Even more dramatic losses have been suffered by the social sciences, including anthropology, economics, history, geography, political science, sociology, urban studies, and the various ethnic studies programs. While all these disciplines have not fallen off equally, as a group of core subjects in the curriculum their combined losses are especially significant. After reaching

TABLE 4 Master's Degrees Awarded in the United States by General Field of Study and Sex, 1977-78 and 1981-82

Field	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of Total	Percent Change Between 1977-78 and 1981-82
Agriculture and Natural Resources	4,023		1.2%	4,163		1.4%	+3.5%
Men	3,268	81.3%		3,114	74.8%		
Women	755	18.7%		1,049	25.2%		
Architecture and Environmental Design	3,115		0.9%	3,327		1.1%	+6.8%
Men	2,304	84.5%		2,242	67.4%		
Women	483	15.5%		1,085	32.6%		
Area Studies	925		0.2%	750		0.2%	-18.9%
Men	483	52.2%		380	50.7%		
Women	442	47.8%		370	49.3%		
Biological Sciences	6,806		2.2%	5,874		1.9%	-13.7%
Men	4,400	64.7%		3,426	58.3%		
Women	2,406	35.3%		2,448	41.7%		
Business and Management	48,484		15.5%	61,428		20.8%	+26.7%
Men	40,301	83.2%		44,359	72.2%		
Women	8,183	16.8%		17,069	27.8%		
Communications	3,296		1.0%	3,327		1.1%	+0.9%
Men	1,673	50.8%		1,578	47.5%		
Women	1,623	49.2%		1,749	52.5%		
Computer and Information Sciences	3,038		0.9%	4,935		1.6%	+62.4%
Men	2,471	81.4%		3,625	73.5%		
Women	567	18.6%		1,310	26.5%		
Education	118,582		38.0%	93,104		31.5%	-21.5%
Men	38,281	32.3%		25,771	27.7%		
Women	80,301	67.7%		67,333	72.3%		
Engineering	16,398		5.3%	17,939		6.0%	+9.4%
Men	15,533	94.7%		16,311	91.0%		
Women	865	5.3%		1,625	9.0%		
Fine and Applied Arts	9,036		2.9%	8,746		2.9%	-3.2%
Men	4,327	47.9%		3,866	44.2%		
Women	4,709	52.1%		4,880	55.8%		

BEST COPY AVAILABLE

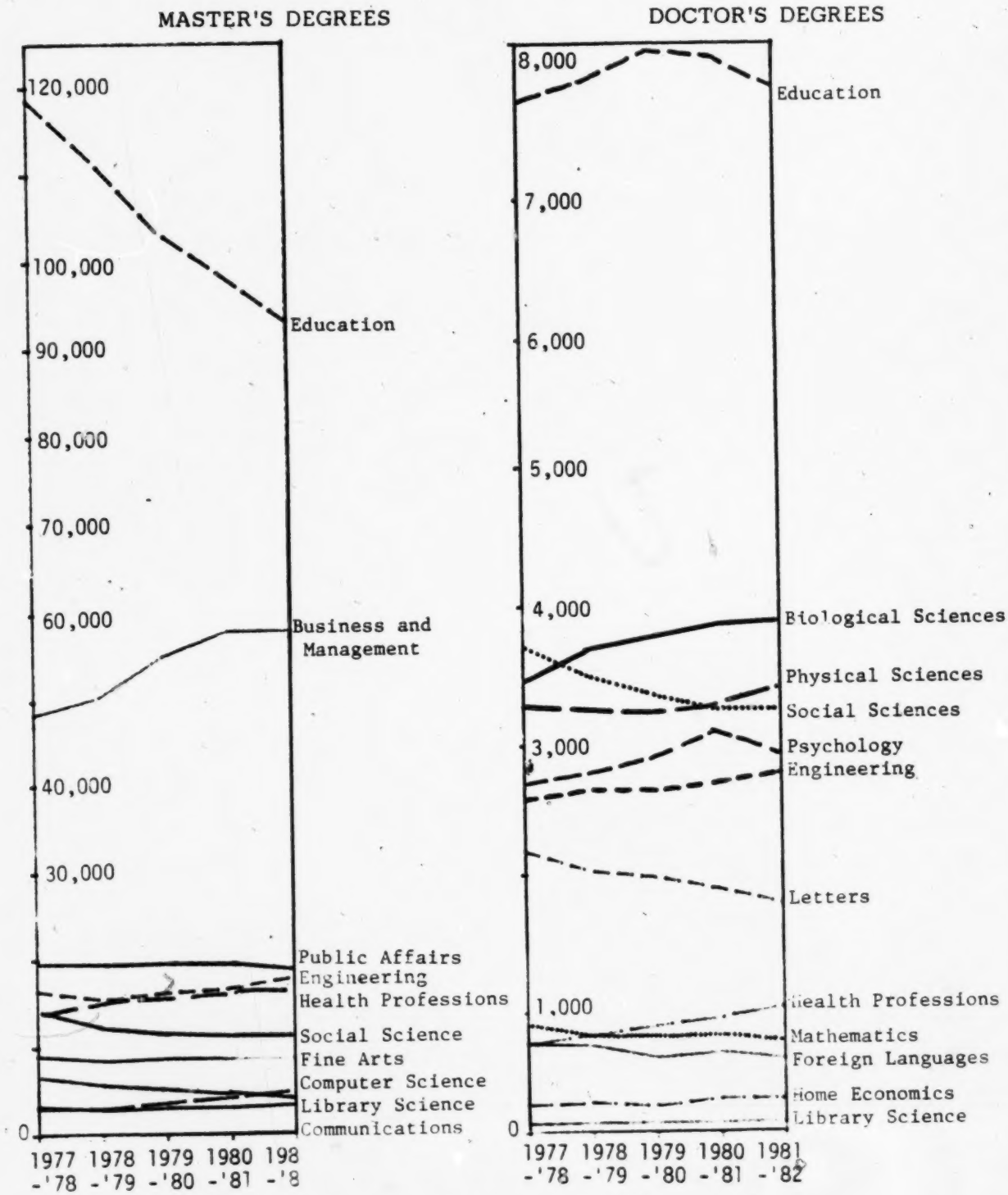
BEST COPY AVAILABLE

TABLE 4 (continued)

Field	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of Total	Percent Change Between 1977-78 and 1981-82
Foreign Languages	2,726		0.8%	2,008		0.6%	-26.3%
Men	795	29.2%		609	30.3%		
Women	1,931	70.8%		1,399	69.7%		
Health Professions	14,325		4.6%	16,503		5.6%	+15.2%
Men	4,265	29.8%		4,006	24.3%		
Women	10,060	70.2%		12,497	75.7%		
Home Economics	2,613		0.8%	2,355		0.7%	+9.9%
Men	212	8.2%		201	8.6%		
Women	2,401	91.8%		2,154	91.4%		
Letters	10,011		3.2%	8,226		2.8%	-17.8%
Men	3,830	38.3%		3,126	38.0%		
Women	6,181	61.7%		5,100	62.0%		
Library Science	6,914		2.2%	4,506		1.5%	-34.8%
Men	1,384	20.0%		799	17.8%		
Women	5,530	80.0%		3,707	82.2%		
Mathematics	3,373		1.0%	2,727		0.9%	-19.1%
Men	2,228	66.1%		1,821	66.8%		
Women	1,145	33.9%		906	33.2%		
Physical Sciences	5,561		1.8%	5,514		1.8%	+0.8%
Men	4,620	83.1%		4,318	78.3%		
Women	941	16.9%		1,196	21.7%		
Psychology	8,160		2.6%	7,791		2.6%	+4.5%
Men	3,919	48.1%		3,209	42.1%		
Women	4,241	51.9%		4,513	57.9%		
Public Affairs and Services	19,953		6.4%	19,388		6.5%	-2.8%
Men	10,445	52.4%		8,285	42.8%		
Women	9,508	47.6%		11,103	57.2%		
Social Sciences	14,634		4.7%	11,951		4.0%	-18.3%
Men	9,784	66.9%		7,438	62.3%		
Women	4,850	33.1%		4,513	37.7%		
Interdisciplinary Studies	4,487		1.4%	4,978		1.7%	+10.9%
Men	2,806	62.6%		2,840	57.1%		
Women	1,681	37.4%		2,138	42.9%		
TOTAL	311,620		100.0%	295,546		100.0%	-5.2%
Men	161,212	51.8%		145,532	49.3%		
Women	150,408	48.2%		150,014	50.7%		

Source: National Center for Education Statistics.

FIGURE 5 Graduate Degrees Awarded in the United States by General Field of Study, 1977-78 Through 1981-82



Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

a peak of 17,318 master's degrees in all the social sciences in 1973, their number has dropped each year since then to 11,951 in 1982 -- a decline of over 30 percent in ten years. Master's degrees in history have declined more than 50 percent during the same period and those in sociology by close to 40 percent (National Center for Education Statistics, 1982, pp. 128-129).

The field showing the greatest percentage loss in number of master's degrees since 1978 is library science -- the only applied field to lose ground except public affairs and services, which had a modest decline. The foreign languages continued a decade-long decline at all degree levels, with 26 percent fewer master's degrees in 1982 than in 1978. The number of master's degrees in mathematics also dropped noticeably, in large part because this discipline lost some of its students to computer and information sciences. Significantly fewer master's degrees were awarded in the biological sciences, despite the fact that interest in these subjects remains strong at the baccalaureate and doctoral levels.

The greatest percentage increase, after computer science and business, occurred in the health professions, attributable in large measure to the growing number of master's degrees in nursing. Master's degrees in engineering increased by 9.4 percent, while agriculture and architecture also increased their share of the total slightly.

Master's Degrees Awarded to Men and Women: In 1981-82, for the first time more women than men earned master's degrees in the United States. This happened not because of any major increase in the number of women receiving master's degrees during the past few years -- there was actually a slight drop from 1977-78 -- but because the number of male degree recipients has fallen off so severely in the past five years.

Nevertheless, the gains made by women at the master's level, as at the baccalaureate and doctoral levels, are not to be discounted. Women increased their share of master's degrees in all but three of the discipline categories, and in these three they essentially held their own. The number of women earning master's degrees in architecture, business and computer science more than doubled in five years, and almost doubled in engineering. Women made strong gains in agriculture and natural resources, in the health professions, and in public affairs and services. The most impressive increase was in the field of business where womens' share of master's degrees rose from 17 percent to 28 percent while the number of men earning these degrees was increasing substantially as well.

Fields in which the number of degrees earned by women declined significantly were in education, foreign languages, library science, and mathematics.

In contrast, the number of men earning master's degrees decreased in all but three fields -- business, computer science, and engineering -- reflecting the sharply downward trend in male master's degree recipients overall since 1977-78.

Doctor's Degrees Awarded by Major Field of Study in the United States

Differences Among Fields: Degrees at the doctoral level -- up slightly since 1977-78 -- have been somewhat less subject than master's degrees to extreme increases or decreases in any field (Table 5, pages 29-30, and Figure 5). In general, however, the disciplines gaining or declining in the number of master's degrees are showing the same tendencies at the doctoral level -- with a few notable exceptions:

- The number of doctorates awarded in education has increased since 1977-78, in contrast to the large drop in master's degrees in this subject.
- Conversely, slightly fewer doctorates were awarded in business, compared to the heavy increase in master's degrees.
- Doctorates in the biological sciences were up 13 percent over the number five years earlier, moving this field into a distant second place behind education for the most doctorates conferred; at the master's level, on the other hand, degrees in biological sciences declined 13 percent.

Other fields in which the number of degrees at the two levels were moving in opposite directions were psychology, library science, and public affairs and services, all down at the master's level but up in the number of doctorates.

Subjects in which fewer degrees were awarded at both the doctoral and master's levels included many of the traditional liberal arts disciplines -- letters, foreign languages, mathematics, and social sciences. Showing solid gains at both degree levels were engineering and the health professions.

Doctorates Awarded to Men and Women: One trend that is quite similar at both the master's and doctoral levels nationally is the steady increase in the proportion of degrees being earned by women in most disciplines. The gap between the number of men and women receiving doctorates, while still pronounced, has been closing steadily since 1972, as each year fewer men and more women have been awarded the degree.

In a pattern identical at both degree levels, women gained in relation to men in all but three disciplinary categories, even though in letters and the social sciences, the gain occurred because the decline in male recipients was more extreme than that for women. Women made impressive gains in actual numbers of degrees in education, biological sciences, and psychology. One conspicuous decline was in mathematics, a loss not compensated for by a proportionate increase in degrees in computer science.

In only a few fields -- biological sciences, computer science, engineering, and the health professions, among them -- did the number of doctorates awarded to men increase slightly or remain stable. The decade-long decline in the number of men earning the doctorate has as many important social and cultural implications, of course, as the concommitant increase in women receiving the degree. Some of the possible consequences of this development are touched on in Part Four of this report.

TABLE 5 Doctor's Degrees Awarded in the United States by General Field of Study and Sex, 1977-78 and 1981-82

Field	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of Total	Percent Change Between 1977-78 and 1981-82
Agriculture and Natural Resources	971		3.0%	1,079		3.3%	+11.1%
Men	909	93.6%		925	85.7%		
Women	62	6.4%		154	14.3%		
Architecture and Environmental Design	73		0.2%	80		0.2%	+9.6%
Men	57	78.1%		58	72.5%		
Women	16	21.9%		22	27.5%		
Area Studies	145		0.4%	98		0.3%	-32.4%
Men	100	69.0%		55	56.2%		
Women	45	31.0%		43	43.8%		
Biological Sciences	3,309		10.3%	3,743		11.4%	+13.1%
Men	2,511	75.9%		2,654	71.0%		
Women	798	24.1%		1,089	29.0%		
Business and Management	867		2.6%	857		2.6%	-1.1%
Men	795	91.7%		705	82.3%		
Women	72	8.3%		152	17.7%		
Communications	191		+0.5%	200		+0.6%	+4.7%
Men	138	72.3%		136	68.0%		
Women	53	27.7%		64	32.0%		
Computer and Information Sciences	196		0.6%	251		0.7%	+28.0%
Men	181	92.4%		230	91.7%		
Women	15	7.6%		21	8.3%		
Education	7,586		23.6%	7,676		23.5%	+1.2%
Men	4,630	61.1%		3,949	51.5%		1.2%
Women	2,956	38.9%		3,727	48.5%		
Engineering	2,440		7.6%	2,636		8.0%	+8.0%
Men	2,383	97.7%		2,496			
Women	57	2.3%		140	5.3%		
Fine and Applied Arts	708		2.2%	670		2.0%	-5.4%
Men	448	63.3%		380	56.7%		
Women	260	36.7%		290	43.3%		

40 BEST COPY AVAILABLE

BEST COPY AVAILABLE

TABLE 5 (continued)

DOCTORS

Field	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of Total	Percent Change Between 1977-78 and 1981-82
Foreign Languages	649		2.0%	536		1.6%	17.4%
Men	294	45.3%		242	45.5%		
Women	355	54.7%		292	54.5%		
Health Professions	654		2.0%	925		2.8%	41.4%
Men	402	62.7%		503	54.4%		
Women	252	37.3%		422	45.6%		
Home Economics	203		0.6%	247		0.7%	+21.6%
Men	58	28.6%		73	29.6%		
Women	145	71.4%		174	70.4%		
Letters	2,069		6.4%	1,681		5.1%	-18.7%
Men	1,261	61.0%		951	54.5%		
Women	808	39.0%		766	45.5%		
Library Science	67		0.2%	84		0.2%	+25.3%
Men	43	64.2%		31	37.0%		
Women	24	35.8%		53	63.0%		
Mathematics	805		2.5%	681		2.0%	-15.4%
Men	681	84.6%		587	86.2%		
Women	124	15.4%		94	13.8%		
Physical Sciences	3,133		9.7%	3,286		10.0%	+4.8%
Men	2,821	90.1%		2,835	86.3%		
Women	321	9.9%		451	13.7%		
Psychology	2,587		8.0%	2,780		8.5%	+7.4%
Men	1,621	62.7%		1,518	54.6%		
Women	966	37.3%		1,262	45.5%		
Public Affairs and Services	395		1.2%	429		1.3%	+8.6%
Men	267	67.6%		245	57.1%		
Women	128	32.4%		184	42.9%		
Social Sciences	3,583		11.1%	3,065		9.4%	-14.5%
Men	2,713	75.8%		2,240	73.1%		
Women	870	24.2%		825	26.9%		
Interdisciplinary Studies	301		0.9%	393		1.2%	+30.5%
Men	205	68.1%		242	61.6%		
Women	96	31.9%		151	38.4%		
TOTAL	32,131		100.0%	32,707		100.0%	+1.8%
Men	23,658	73.7%		22,224	68.0%		
Women	8,473	26.3%		10,483	32.0%		

Source: National Center for Education Statistics.

Graduate Degrees Awarded by Major Field of Study in California

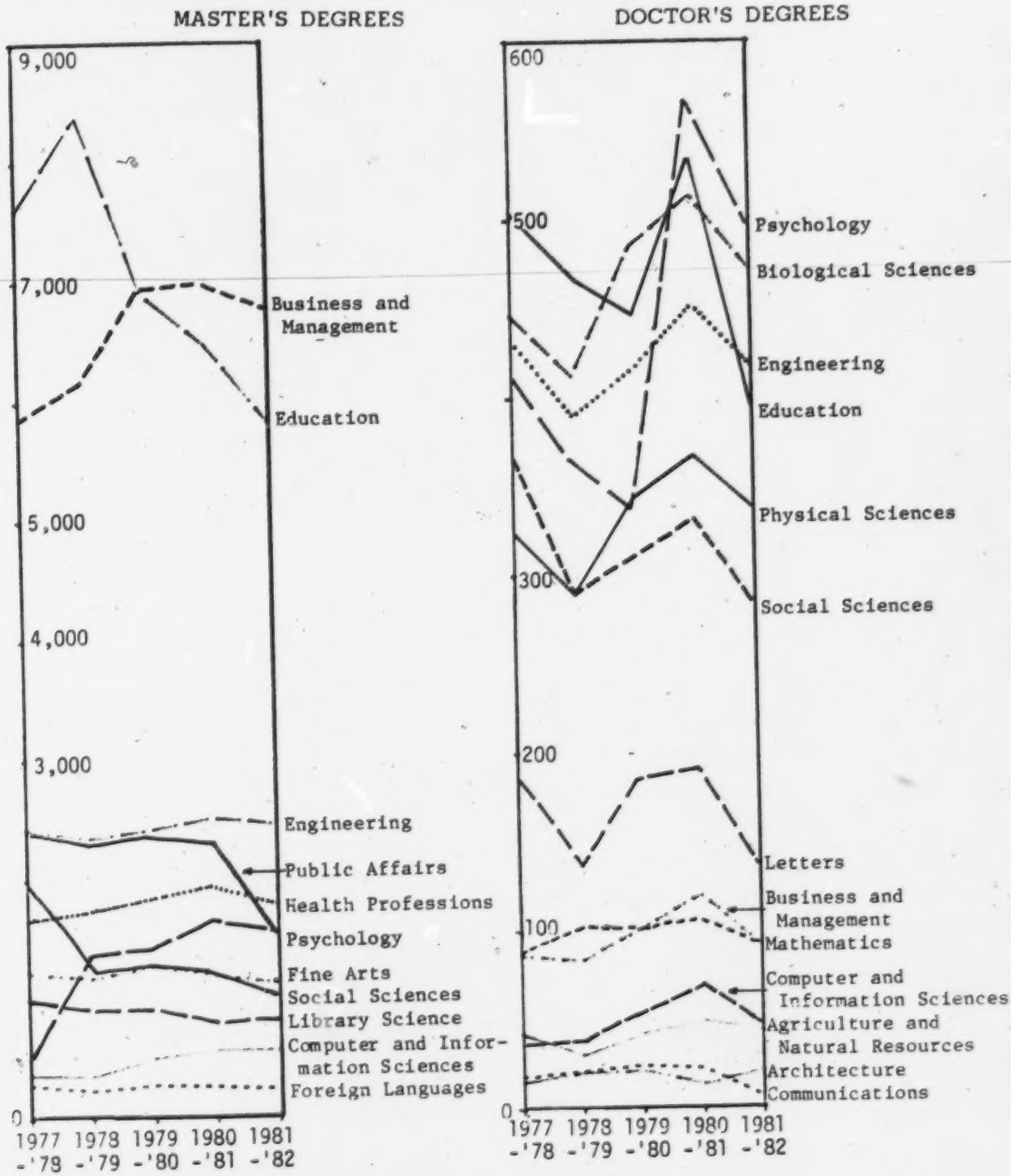
While it is informative to examine changes in the number of degrees awarded by California institutions in each discipline over a five-year period, such a review takes on another dimension when set against similar national statistics Table 6 shows the percentage change in the number of graduate degrees in the 21 major fields of study between 1977-78 and 1981-82 in the United States and in California. Figures 5 and 6 on pages 26 and 32 portrays these changes geographically.

TABLE 6 Percentage Change in the Numbers of Graduate Degrees Awarded in the United States and in California, by General Field of Study, Between 1977-78 and 1981-82

Discipline	Masters		Doctors	
	U.S.	Calif.	U.S.	Calif.
Agriculture and Natural Resources	+3.5%	+25.5%	+11.1%	+2.4%
Architecture and Environmental Design	+6.8	+23.6	+9.6	+40.0
Biological Sciences	-13.7	-12.3	+13.1	+5.6
Business and Management	+26.7	+18.6	- 1.1	+5.8
Communications	+0.9	-22.9	+4.7	-66.6
Computer and Information Sciences	+62.4	+52.6	+28.0	+24.2
Education	-21.5	-19.9	+1.2	- 2.2
Engineering	+9.4	+2.0	+8.0	- 3.9
Fine and Applied Arts	- 3.2	- 7.8	- 5.4	-38.5
Foreign Languages	-26.3	-18.7	-17.4	-48.4
Health Professions	+15.2	+8.9	+41.4	+42.0
Home Economics	+9.9	+15.6	+21.6	-100.0
Letters	-17.8	-15.6	-18.7	-27.0
Library Science	-34.8	-66.9	+25.3	-54.5
Mathematics	-19.1	-11.4	-15.4	+2.2
Physical Sciences	+0.8	- 2.1	+4.8	+4.1
Psychology	+4.5	+29.9	+7.4	+81.3
Public Affairs and Services	- 2.8	-36.7	+8.6	-32.1
Social Sciences	-18.3	-44.8	-14.5	-17.5
Interdisciplinary Studies	+10.9	N/A	30.5	N/A
TOTALS	- 5.2%	+0.5%	+1.8%	+2.3%

Source: California Postsecondary Education Commission.

FIGURE 6 Graduate Degrees Awarded by Accredited California Institutions of Higher Education, 1977-78 Through 1981-82



Source: California Postsecondary Education Commission.

The percentage changes listed in Table 6 for California are affected somewhat by the fact that the University of Southern California failed to report degrees awarded by discipline in 1981-82, submitting only the total number of master's and doctor's degrees conferred that year. Nonetheless, national and California tendencies in most disciplines are similar. Decreases in the number of master's degrees in biological sciences, education, and letters, and in doctorates in social sciences are approximately the same as are increases at both degree levels in computer sciences and in doctorates in health professions and physical sciences.

Great disparities are evident, however, at the master's level, where percentage increases in degrees in agriculture, architecture, home economic, and psychology awarded by California institutions far exceeded those nationally, as did doctorates in architecture and psychology. The number of master's degrees in engineering grew at a slower rate in California than in the country as a whole and actually declined at the doctoral level in the State while increasing 8 percent nationally. The most striking differences in percentage declines at one or both degree levels were in communications, foreign languages, public affairs, and social sciences.

Accounting for all of these differences would require a more extended analysis than is appropriate in this report, if, indeed, explanations are possible in many cases. Although close correspondence might be expected between the figures for California -- which awards more than 10 percent of all graduate degrees in the United States -- and those for the nation as a whole, only speculation is possible on the reasons for these differences. Since some of the percentages are based on relatively small numbers, it would be inadvisable to attach undue significance to these comparisons. Instead, they are useful primarily in providing context by which to look more closely at developments in individual disciplines in California institutions.

GRADUATE DEGREES AWARDED BY SEGMENT IN CALIFORNIA

Table 7 on pages 34-40 lists for each of the fields discussed thus far the number of master's degrees awarded during 1977-78 and 1981-82 in California and by the University of California, the California State University, and California's accredited independent colleges and universities. Table 8 on pages 41-47 contains similar information on doctor's degrees. Figures 7 through 9 on pages 48-50 portray much of these data in graphic form.

University of California

In 1981-82, the University awarded close to 20 percent of all master's degrees in the State and 45 percent of all doctorates, a slight increase at both levels since 1977-78.

The pattern of graduate degrees awarded by the University of California during the past five years shows a more even distribution than that of

(text continues on page 51)

TABLE 7 Master's Degrees Awarded by Accredited California Institutions, by General Field of Study, Segment, and Sex, 1977-78 and 1981-82

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Agriculture and Natural Resources							
All Total	301		0.9%	378		1.2%	+25.5%
Male	235	78.1%		279	73.9%		
Female	66	21.9%		99	26.1%		
UC Total	162		2.9%	197		3.2%	+21.6
Male	123	75.9%		130	66.0%		
Female	39	24.1%		67	34.0%		
CSU Total	126		1.2%	142		1.4%	+12.7%
Male	102	81.0%		117	82.4%		
Female	24	19.0%		25	17.6%		
Ind Total	13		.08%	39		0.2%	+200.0%
Male	10	76.9%		32	82.1%		
Female	3	23.1%		7	17.9%		
Architecture and Environmental Design							
All Total	305		0.9%	377		1.2%	+23.6%
Male	201	66.0%		241	64.0%		
Female	104	34.0%		136	36.0%		
UC Total	205		3.6%	269		3.4%	+31.2%
Male	125	61.0%		167	62.1%		
Female	80	39.0%		102	37.9%		
CSU Total	69		0.6%	93		0.9%	+34.7%
Male	53	76.8%		61	65.6%		
Female	16	23.2%		32	34.4%		
Ind Total	31		0.2%	15		0.1%	-51.6%
Male	23	74.2%		13	86.7%		
Female	8	25.8%		2	13.3%		
Biological Sciences							
All Total	662		2.1%	580		1.9%	-12.3%
Male	434	65.6%		349	60.2%		
Female	228	34.4%		231	39.8%		
UC Total	318		5.7%	275		4.5%	-13.5%
Male	202	63.5%		156	56.7%		
Female	116	36.5%		119	43.3%		
CSU Total	256		2.5%	219		2.2%	-14.4%
Male	180	70.3%		140	63.9%		
Female	76	29.7%		79	36.1%		
Ind Total	88		0.5%	86		0.5%	-2.3%
Male	52	59.1%		53	61.6%		
Female	36	40.9%		33	38.4%		

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Business and Management							
All Total	5,715		18.6%	6,782		22.2%	+18.6%
Male	4,864	83.4%		4,873	71.9%		
Female	951	16.6%		1,909	28.1%		
UC Total	770		13.7%	936		15.6%	+21.5%
Male	558	72.5%		610	65.2%		
Female	212	27.5%		326	34.8%		
CSU Total	1,029		10.1%	1,318		13.5%	+28.0%
Male	803	78.0%		903	68.5%		
Female	226	22.0%		415	31.5%		
Ind Total	3,916		26.2%	4,528		30.6%	+15.6%
Male	3,403	86.9%		3,360	74.2%		
Female	513	13.1%		1,168	25.8%		
Communications							
All Total	226		0.7%	172		0.5%	-23.9%
Male	115	50.9%		83	48.3%		
Female	111	49.1%		89	51.7%		
UC Total	16		0.2%	10		0.1%	-37.5%
Male	8	50.0%		4	40.0%		
Female	8	50.0%		6	60.0%		
CSU Total	73		0.7%	87		0.8%	+19.1%
Male	29	39.7%		38	43.7%		
Female	44	60.3%		49	56.3%		
Ind Total	137		0.9%	75		0.5%	-45.2%
Male	78	56.9%		41	54.7%		
Female	59	43.1%		34	45.3%		
Computer and Information Sciences							
All Total	363		1.1%	554		1.8%	+52.6%
Male	307	84.6%		436	78.7%		
Female	56	15.4%		118	21.3%		
UC Total	85		1.5%	157		2.6%	+84.7%
Male	73	85.9%		132	84.1%		
Female	12	14.1%		25	15.9%		
CSU Total	85		0.8%	160		1.6%	+88.0%
Male	65	76.5%		111	69.4%		
Female	20	23.5%		49	30.6%		
Ind Total	193		1.3%	237		1.6%	+22.8%
Male	169	87.6%		193	81.4%		
Female	24	12.4%		44	18.6%		

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Education							
All Total	7,277		23.7%	5,827		19.0%	-19.9%
Male	2,343	25.4%		1,661	28.5%		
Female	5,434	74.6%		4,166	71.5%		
UC Total	272		4.8%	263		4.4%	-3.3%
Male	89	32.7%		72	27.4%		
Female	183	67.3%		191	72.6%		
CSU Total	3,583		35.3%	3,307		33.9%	-14.1%
Male	1,031	28.8%		913	27.6%		
Female	2,552	71.2%		2,394	72.4%		
Ind Total	3,422		22.9%	2,257		15.2%	-34.0%
Male	1,223	35.7%		676	30.0%		
Female	2,199	64.3%		1,581	70.0%		
Engineering							
All Total	2,402		7.8%	2,451		8.0%	+2.0%
Male	2,235	93.1%		2,215	90.4%		
Female	167	6.9%		236	9.6%		
UC Total	855		15.3%	999		16.7%	+16.8%
Male	797	93.2%		891	89.2%		
Female	58	6.8%		108	10.8%		
CSU Total	388		3.8%	432		4.4%	+11.3%
Male	368	94.8%		414	95.8%		
Female	20	5.2%		18	4.2%		
Ind Total	1,159		7.7%	1,020		6.9%	-12.0%
Male	1,070	92.3%		910	89.2%		
Female	89	7.7%		110	10.8%		
Fine and Applied Arts							
All Total	1,212		3.9%	1,117		3.6%	-7.8%
Male	609	50.3%		489	43.8%		
Female	603	49.7%		628	56.2%		
UC Total	354		6.3%	366		6.1%	+3.3%
Male	157	44.4%		161	44.0%		
Female	197	55.6%		205	56.0%		
CSU Total	488		4.8%	457		4.7%	-6.3%
Male	248	50.8%		190	41.6%		
Female	240	49.2%		267	58.4%		
Ind Total	370		2.4%	294		1.9%	-20.5%
Male	204	55.1%		138	46.9%		
Female	166	44.9%		156	53.1%		

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Foreign Languages							
All Total	283		0.9%	230		0.7%	-18.7%
Male	78	27.6%					
Female	205	72.4%					
UC Total	141		2.5%	93		1.5%	-34.0%
Male	44	31.2%					
Female	97	68.8%					
CSU Total	93		0.9%	89		0.9%	-4.3%
Male	23	24.7%					
Female	70	75.3%					
Ind Total	49		0.3%	48		0.3%	-2.0%
Male	11	22.4%		14	29.2%		
Female	38	77.6%		34	70.8%		
Health Professions							
All Total	1,657		5.4%	1,805		5.9%	+8.9%
Male	521	31.5%		498	27.6%		
Female	1,136	68.5%		1,307	72.4%		
UC Total	748		13.3%	641		10.7%	-14.3%
Male	247	33.0%		183	28.5%		
Female	501	67.0%		458	71.5%		
CSU Total	558		5.5%	677		6.9%	+21.3%
Male	133	23.8%		110	16.2%		
Female	425	76.2%		567	83.8%		
Ind Total	351		2.3%	487		3.3%	+38.7%
Male	141	40.2%		205	42.1%		
Female	210	59.8%		282	57.9%		
Home Economics							
All Total	154		0.5%	178		0.6%	+15.6%
Male	34	22.1%		26	14.6%		
Female	120	77.9%		152	85.4%		
UC Total	31		0.5%	9		0.1%	-70.9%
Male	11	35.5%		2	22.2%		
Female	20	64.5%		7	77.8%		
CSU Total	117		1.1%	154		1.6%	+31.6%
Male	4	3.5%		22	14.3%		
Female:	113	96.5%		132	85.7%		
Ind Total	6			15		0.1%	+150.0%
Male	4	66.7%		2	13.3%		
Female	2	33.3%		13	86.7%		

BEST COPY AVAILABLE

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Letters							
All Total	980		3.2%	827		2.7%	-15.6%
Male	424	43.3%		320	38.7%		
Female	556	56.7%		507	61.3%		
UC Total	230		4.1%	256		4.3%	+11.3%
Male	102	44.3%		105	41.0%		
Female	128	55.7%		151	59.0%		
CSU Total	556		5.5%	443		4.5%	-20.3%
Male	231	41.5%		161	36.3%		
Female	325	58.5%		282	63.7%		
Ind Total	194		1.3%	128		0.8%	-34.0%
Male	91	46.9%		54	42.2%		
Female	103	53.1%		74	57.8%		
Library Science							
All Total	565		1.8%	187		0.6%	-66.9%
Male	141	25.0%		33	17.7%		
Female	424	75.0%		154	82.3%		
UC Total	159		2.8%	111		0.1%	-30.1%
Male	51	32.1%		22	19.8%		
Female	108	67.9%		89	80.2%		
CSU Total	231		2.3%	76		0.7%	-67.1%
Male	48	20.8%		11	14.5%		
Female	183	79.2%		65	85.5%		
Ind Total	175		1.2%	0		0.0%	-17,500.0%
Male	42	24.0%		0	0.0%		
Female	133	76.0%		0	0.0%		
Mathematics							
All Total	273		0.8%	242		0.7%	-11.4%
Male	213	78.1%		186	76.9%		
Female	60	21.9%		56	23.1%		
UC Total	120		2.1%	128		2.1%	+6.6%
Male	93	77.5%		102	79.7%		
Female	27	22.5%		26	20.3%		
CSU Total	69		0.6%	62		0.6%	-10.1%
Male	50	72.5%		42	67.7%		
Female	19	27.5%		20	32.3%		
Ind Total	84		0.5%	52		0.3%	-38.1%
Male	70	83.3%		42	80.8%		
Female	14	16.7%		10	19.2%		

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Physical Sciences							
All Total	555		1.8%	543		1.7%	-2.1%
Male	464	83.6%		433	79.8%		
Female	91	16.4%		110	20.2%		
UC Total	289		5.1%	280		4.8%	-3.1%
Male	241	83.4%		240	85.7%		
Female	48	16.6%		40	14.3%		
CSU Total	123		1.2%	170		1.7%	+38.2%
Male	100	81.3%		128	75.3%		
Female	23	18.7%		42	24.7%		
Ind Total	143		0.9%	93		0.6%	-35.0%
Male	123	86.0%		65	69.9%		
Female	20	14.0%		28	30.1%		
Psychology							
All Total	1,212		3.9%	1,575		5.1%	+29.9%
Male	598	49.4%		627	39.8%		
Female	614	50.6%		948	60.2%		
UC Total	57		1.0%	61		1.0%	+7.0%
Male	33	57.9%		27	44.3%		
Female	24	42.1%		34	55.7%		
CSU Total	582		5.7%	527		5.4%	-9.4%
Male	280	48.1%		218	41.4%		
Female	302	51.9%		309	58.6%		
Ind Total	573		3.8%	987		6.6%	+72.2%
Male	285	49.7%		382	38.7%		
Female	288	50.3%		605	61.3%		
Public Affairs and Services							
All Total	2,399		7.8%	1,518		4.9%	-36.7%
Male	1,595	66.5%		789	52.0%		
Female	804	33.5%		729	48.0%		
UC Total	171		3.0%	172		2.8%	+0.5%
Male	60	35.1%		40	23.3%		
Female	111	64.9%		132	76.7%		
CSU Total	824		8.1%	825		8.4%	+0.1%
Male	476	57.8%		342	41.5%		
Female	348	42.2%		483	58.5%		
Ind Total	1,404		9.4%	521		3.5%	-62.9%
Male	1,059	75.4%		407	78.1%		
Female	345	24.6%		114	21.9%		

BEST COPY A

TABLE 7 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Social Sciences							
All Total	1,907		6.2%	1,053		3.4%	-44.8%
Male	1,334	70.0%		630	59.8%		
Female	573	30.0%		423	40.2%		
UC Total	469		8.4%	480		8.0%	+2.3%
Male	285	60.8%		286	59.6%		
Female	184	39.2%		194	40.4%		
CSU Total	516		5.0%	359		3.7%	-30.4%
Male	335	64.9%		218	60.7%		
Female	181	35.1%		141	39.3%		
Ind Total	922		6.2%	214		1.4%	-76.8%
Male	714	77.4%		126	58.9%		
Female	208	22.6%		88	41.1%		
ALL TOTAL	30,689			30,532			-0.5%
Male	18,590	60.6%		16,864	55.2%		
Female	12,099	39.4%		13,668	44.8%		
UC Total	5,602		18.2%	5,979		19.6%	+6.7%
Male	3,411	60.9%		3,583	59.9%		
Female	2,191	39.1%		2,396	40.1%		
CSU Total	10,146		33.1%	9,755		31.9%	-3.8%
Male	4,990	49.2%		4,292	44.0%		
Female	5,156	50.8%		5,463	56.0%		
Ind Total	14,941		48.7%	14,798		48.5%	
Male	10,189	68.2%		8,989	60.7%		
Female	4,752	31.8%		5,809	39.3%		-1.0%

Source: California Postsecondary Education Commission.

TABLE 8 Doctor's Degrees Awarded by Accredited California Institutions, by General Field of Study, Segment, and Sex, 1977-78 and 1981-82

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Agriculture and Natural Resources							
All Total	42		0.9%	43		0.9%	+2.4%
Male	39	92.9%		37	86.1%		
Female	3	7.1%		6	13.9%		
UC Total	33		1.7%	35		1.7%	+6.0
Male	32	97.0%		30	85.7%		
Female	1	3.0%		5	14.3%		
Ind Total	9		0.3%	8		0.3%	-11.1%
Male	7	77.8%		7	87.5%		
Female	2	22.2%		1	12.5%		
Architecture and Environmental Design							
All Total	15		0.3%	21		0.4%	+40.0%
Male	13	87.0%		16	76.2%		
Female	2	13.0%		5	23.8%		
UC Total	15		0.7%	21		1.0%	+40.0%
Male	13	86.7%		16	76.2%		
Female	2	13.3%		5	23.8%		
Ind Total	0		0.0%	0		0.0%	0.0%
Male	0	0.0%		0	0.0%		
Female	0	0.0%		0	0.0%		
Biological Sciences							
All Total	446		10.3%	471		10.7%	+5.6%
Male	346	77.6%		333	70.8%		
Female	100	22.4%	20.1%	138	29.2%		
UC Total	381			412		20.8%	+8.1%
Male	298	78.2%		290	70.4%		
Female	83	21.8%		122	29.6%		
CSU Total	0		0.0%	1		16.6%	*
Male	0	0.0%		1	100.0%		
Female	0	0.0%		0	0.0%		
Ind Total	65		2.7%	59		2.4%	-9.2%
Male	48	73.8%		43	72.9%		
Female	17	26.2%		16	27.1%		

* Percentage increase cannot be calculated because the zero divisor is an undefined operation.

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Business and Management							
All Total	86		1.9%	91		2.0%	+5.8%
Male	80	93.1%		76	83.5%		
Female	6	6.9%		15	16.5%		
UC Total	37		1.9%	28		1.4%	-24.3%
Male	33	89.2%		23	82.1%		
Female	4	10.8%		5	17.9%		
Ind Total	49		2.0%	63		2.6%	+28.6%
Male	47	95.9%		53	84.1%		
Female	2	4.1%		10	15.9%		
Communications							
All Total	18		0.4%	6		0.1%	-66.6%
Male	16	88.9%		4	66.7%		
Female	2	11.1%		2	33.3%		
UC Total	0		0.0%	0	0.0%	0.0%	
Male		0.0%			0.0%		
Female		0.0%					
Ind Total	18		0.7%	6		0.2%	-66.6%
Male	16	88.9%		4	66.7%		
Female	2	11.1%		2	33.3%		
Computer and Information Sciences							
All Total	33		0.7%	41		0.9%	+24.2%
Male	33	100.0%		38	92.7%		
Female	0	0.0%	1.1%	3	7.3%		
UC Total	22			28		1.4%	+27.3%
Male	22	100.0%		25	89.3%		
Female	0	0.0%		3	10.7%		
Ind Total	11		0.4%	13		0.5%	+18.2%
Male	11	100.0%		13	100.0%		
Female		0.0%			0.0%		

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Education							
All Total	403		9.3%	394		8.9%	-2.2%
Male	217	52.4%		192	49.5%		
Female	192	47.6%		199	50.5%		
UC Total	109		5.7%	142		7.1%	+30.3%
Male	50	45.9%		76	53.5%		
Female	59	54.1%		66	46.5%		
CSU Total	4		100.0%	3		50.0%	-25.0%
Male	1	25.0%		0	0.0%		
Female	3	75.0%		3	100.0%		
Ind Total	300		12.4%	249		10.3%	-17.0%
Male	167	55.7%		116	46.6%		
Female	133	44.3%		133	53.4%		
Engineering							
All Total	433		10.0%	416		9.4%	-3.9%
Male	422	97.5%		390	93.8%		
Female	11	2.5%		26	6.2%		
UC Total	228		12.0%	245		12.3%	+7.4%
Male	223	97.8%		232	94.7%		
Female	5	2.2%		13	5.3%		
Ind Total	205		8.5%	171		7.0%	-16.6%
Male	199	97.1%		158	92.4%		
Female	6	2.9%		13	7.6%		
Fine and Applied Arts							
All Total	83		1.9%	51		1.1%	-38.6%
Male	43	51.8%		28	60.8%		
Female	40	48.2%		20	39.2%		
UC Total	45		2.4%	35		1.7%	-22.2%
Male	19	42.2%		19	54.3%		
Female	26	57.8%		16	45.7%		
Ind Total	38		1.6%	16		0.6%	-57.9%
Male	24	63.2%		9	56.2%		
Female	14	36.8%		7	43.8%		

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Men/Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Foreign Languages							
All Total	62		1.4%	42		0.7%	-32.2%
Male	26	41.9%					
Female	36	58.1%					
UC Total	40		2.1%	26		1.3%	-35.0%
Male	15	37.5%					
Female	25	62.5%					
Ind Total	22		0.9%	16		0.6%	-27.3%
Male	11	50.0%		7	43.8%		
Female	11	50.0%		9	56.2%		
Health Professions							
All Total	53		1.2%	276*		6.2%	+420.0%
Male	30	56.6%		178	64.5%		
Female	23	43.4%		98	35.5%		
UC Total	41		2.1%	53		2.7%	+19.5%
Male	22	53.7%		25	47.2%		
Female	19	46.3%		28	52.8%		
Ind Total	12		0.5%	223*		9.2%	+1,758.3%
Male	8	66.7%		153	68.6%		
Female	4	33.3%		70	31.4%		
Home Economics							
All Total	6		0.1%	0		0%	-100.0%
Male	5	83.3%		0	0.0%		
Female	1	16.7%		0	0.0%		
UC Total	6		0.3%	0		0%	-100.0%
Male	5	83.3%		0	0.0%		
Female	1	16.7%		0	0.0%		
Ind Total	0		0.0%	0		0%	0.0%
Male	0	0.0%		0	0.0%		
Female	0	0.0%		0	0.0%		

* Includes 148 Ph.D.s in chiropractic awarded by the Los Angeles College of Chiropractic.

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Letters							
All Total	185		4.2%	135		3.0%	-27.0%
Male	113	61.1%		84	62.2%		
Female	72	38.9%		51	37.8%		
UC Total	106		5.6%	105		5.3%	-0.9%
Male	63	59.4%		63	60.0%		
Female	43	40.6%		42	40.0%		
Ind Total	79		3.3%	30		1.2%	-62.0%
Male	50	63.3%		21	70.0%		
Female	29	36.7%		9	30.0%		
Library Science							
All Total	11		0.2%	5		0.1%	-54.5%
Male	9	81.9%		3	60.0%		
Female	2	18.1%		2	40.0%		
UC Total	3		0.1%	5		0.2%	+66.6%
Male	2	66.7%		3	60.0%		
Female	1	33.3%		2	40.0%		
Ind Total	8		0.3%	0		0.0%	-100.0%
Male	7	87.5%		0	0.0%		
Female	1	12.5%		0	0.0%		
Mathematics							
All Total	89		2.0%	91		2.0%	+2.2%
Male	78	87.7%		83	91.3%		
Female	11	12.3%		8	8.7%		
UC Total	71		3.7%	66		3.3%	-7.0%
Male	61	85.9%		59	89.4%		
Female	10	14.1%		7	10.6%		
Ind Total	18		0.7%	25		1.0%	+38.9%
Male	17	94.4%		24			
Female	1	5.6%		1			

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Physical Sciences							
All Total	432		10.0%	450		10.2%	+4.1%
Male	392	90.8%		378	81.5%		
Female	40	9.2%		70	18.5%		
UC Total	282		14.9%	335		16.9%	+18.8%
Male	258	91.5%		279	83.3%		
Female	24	8.5%		56	16.7%		
CSU Total	0		0.0%	2		33.3%	*
Male	0	0.0%		2	100.0%		
Female	0	0.0%		0	0.0%		
Ind Total	150		6.2%	113		4.6%	-24.7%
Male	134	89.3%		99	87.6%		
Female	16	10.7%		14	12.4%		
Psychology							
All Total	364		8.4%	660		15.0%	+81.3%
Male	223	61.3%		351	53.1%		
Female	141	38.7%		310	46.9%		
UC Total	79		4.2%	87		4.4%	+10.1%
Male	54	68.4%		46	52.9%		
Female	25	31.6%		41	47.1%		
Ind Total	285		11.8%	574		23.7%	101.4%
Male	169	59.3%		305	53.1%		
Female	116	40.7%		269	46.9%		
Public Affairs and Services							
All Total	56		1.3%	38		0.8%	-32.1%
Male	32	57.2%		22	57.9%		
Female	24	42.8%		16	42.1%		
UC Total	20		1.0%	18		0.9%	-10.8%
Male	9	45.0%		6	33.3%		
Female	11	55.0%		12	66.7%		
Ind Total	36		1.5%	20		0.8%	-44.4%
Male	23	63.9%		16	80.0%		
Female	13	36.1%		4	20.0%		

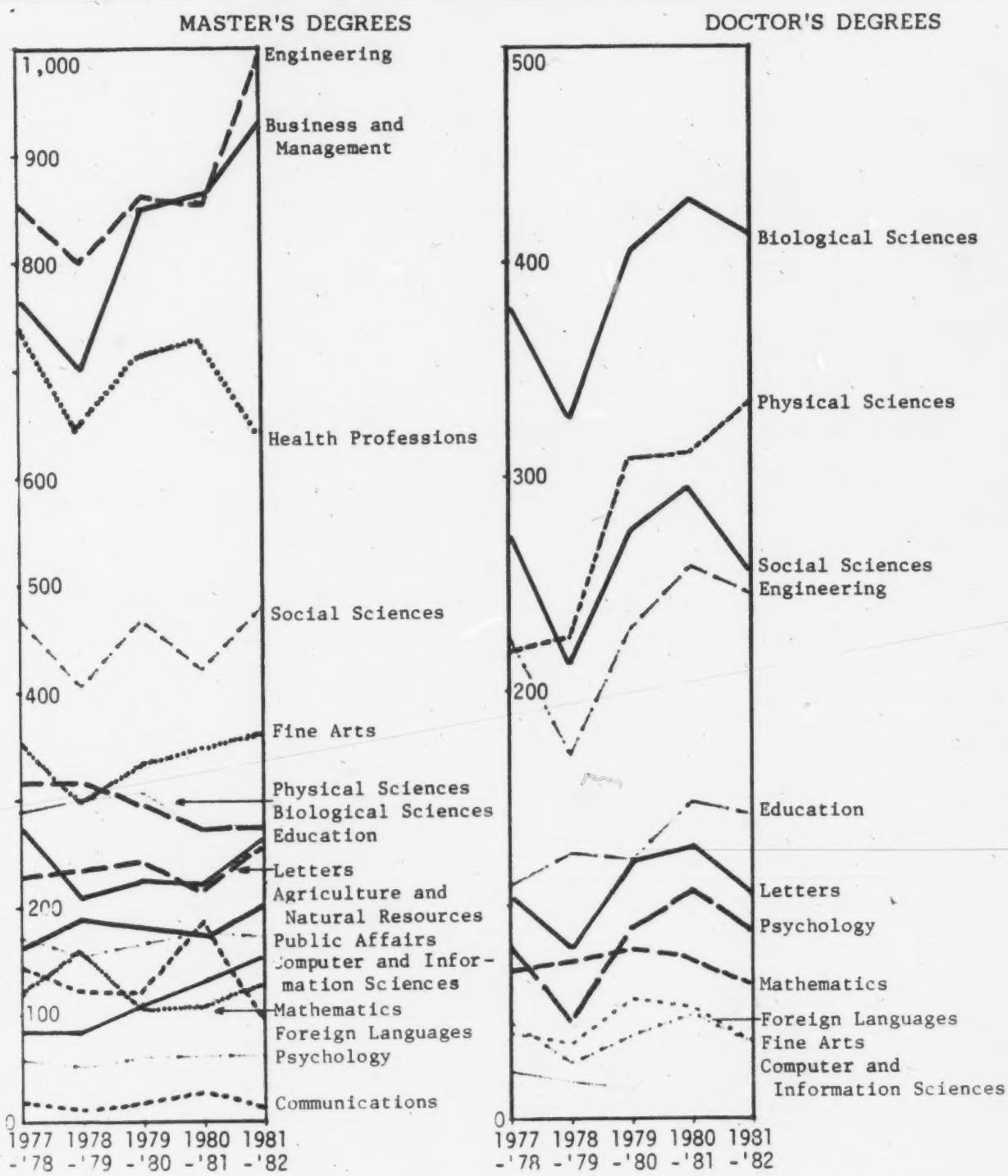
* Percentage increase cannot be calculated because the zero divisor is an undefined operation.

TABLE 8 (continued)

Field and Segment	1977-78 Number Earned	1977-78 Percent Men and Women	1977-78 Percent of State or System Total	1981-82 Number Earned	1981-82 Percent Men and Women	1981-82 Percent of State/ System Total	Percent Change Between 1977-78 and 1981-82
Social Sciences							
All Total	457		10.6%	377		8.5%	-17.5%
Male	332	72.7%		280	74.3%		
Female	125	27.3%		97	25.7%		
UC Total	276		14.6%	255		12.8%	-7.6%
Male	203	73.6%		185	72.5%		
Female	73	26.4%		70	27.5%		
Ind Total	181		7.5%	122		5.0%	-32.6%
Male	129	71.3%		95	77.9%		
Female	52	28.7%		27	27.1%		
ALL TOTAL	4,306			4,407			+2.3%
Male	3,289	76.4%		3,105	70.5%		
Female	1,017	23.6%		1,302	29.5%		
UC Total	1,890		43.9%	1,983		45.0%	+4.9%
Male	1,480	78.3%		1,451	73.2%		
Female	410	21.7%		532	26.8%		
CSU Total	4		0.1%	6		0.1%	+50.0%
Male	1	25.0%		6	50.0%		
Female	3	75.0%		0	50.0%		
Ind Total	2,412		56.0%	2,418		54.9%	+0.2%
Male	1,808	75.0%		1,648	68.2%		
Female		604	25.0%	770	31.8%		

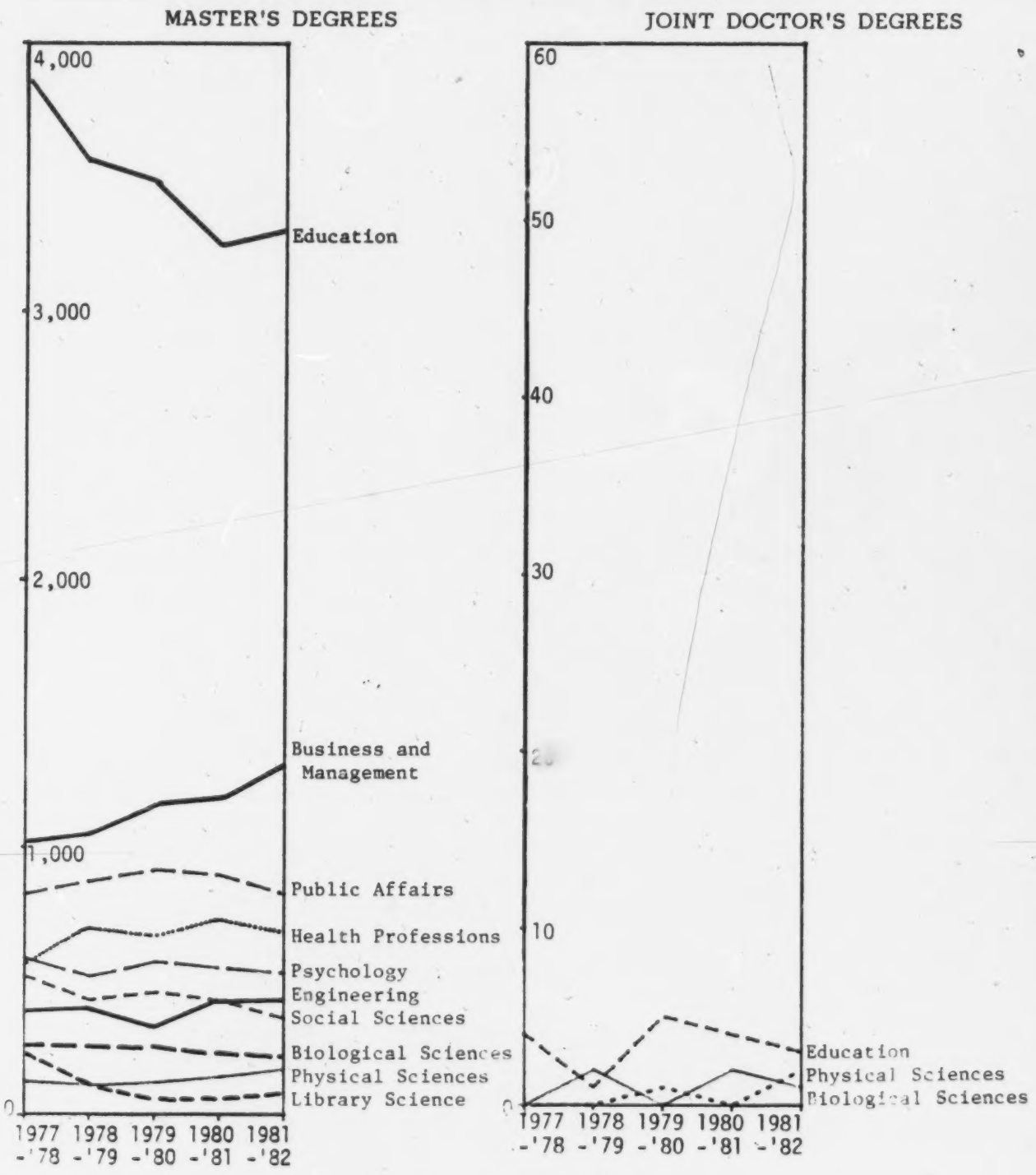
Source: California Postsecondary Education Commission.

FIGURE 7 Graduate Degrees Awarded by the University of California, 1977-78 Through 1981-82



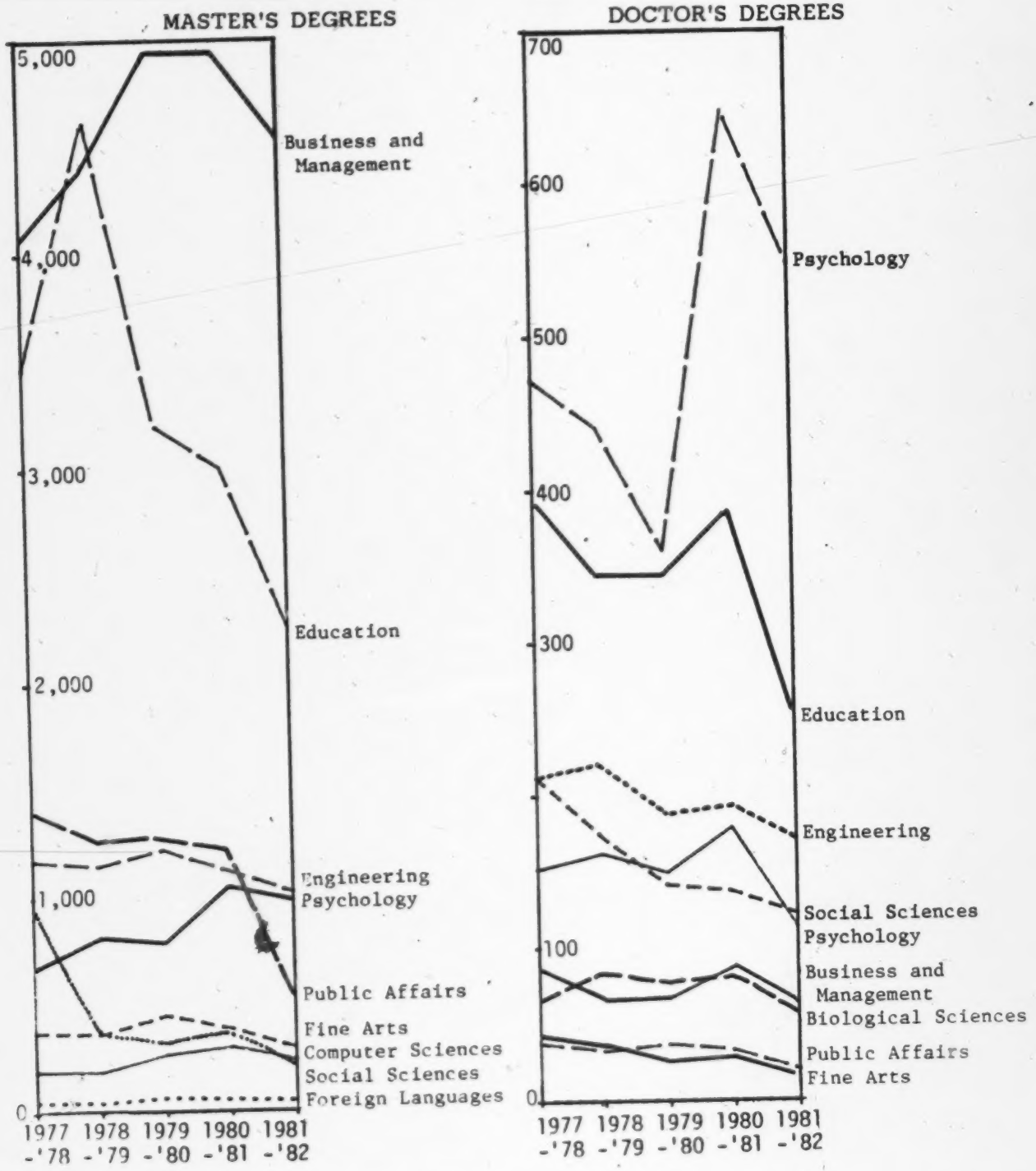
Source: California Postsecondary Education Commission.

FIGURE 8 Graduate Degrees Awarded by the California State University, 1977-78, Through 1981-82



Source: California Postsecondary Education Commission.

FIGURE 9 Graduate Degrees Awarded by Accredited Independent California Universities, 1977-78 Through 1981-82



Source: California Postsecondary Education Commission.

(text continued from page 33)

either the State University or California's independent institutions and also than that of national averages. For example, no more than 17 percent of the University's master's degrees are in one disciplinary area (engineering), whereas in each of the other two segments, 30 percent or more are in one field. At the doctoral level, the University leans somewhat more heavily toward a few disciplines (for example, the biological and physical sciences and engineering account for half of all its doctoral degrees), but at the same time, doctorates in letters and the social sciences constitute a higher percentage of its total than do these degrees nationally.

In addition, shifts among disciplines over a five-year period tend to be less extreme in the University than either in the other segments or nationally (Figures 7 through 9 and Figure 5). While percentage changes in the University's degrees in some disciplines are high, a relative stability is evident in most of the basic academic subjects. Over a 10 or 15 year period, of course, degrees in many of the humanities and social science disciplines have shown a general decline, but during the past five years, the number of its master's degrees in letters and social sciences and of Ph.Ds in letters actually increased.

The relative percentages of men and women earning graduate degrees also changed less within the University of California than in the other two segments or nationally. In marked contrast to the national trend, more men received master's degrees from the University in 1982 than five years earlier, and only slightly fewer men earned doctorates. Women gained at both degree levels, but at a slightly lower rate than in the other segments and nationally.

The California State University

Since the peak year of 1977-78, when the State University awarded 10,146 master's degrees, its total has fallen off slightly but still amounts to almost one-third of all master's degrees in California. The State University has also conferred a small number of doctorates during the past decade through the joint doctoral program (Figure 8).

As indicated in Tables 7 and 8, increases or decreases of 20 percent or more in the number of degrees by discipline are not uncommon across the State University curriculum, with just about the same number of fields gaining as declining. With the exception of the physical sciences, however, the ten fields awarding more master's degrees in 1981-82 than in 1977-78 have been the so-called applied fields -- agriculture, business, computer science, engineering, and the health professions, among others. In the traditional liberal arts subjects of the biological sciences, letters, mathematics, and the social sciences, significantly fewer master's degrees were conferred, continuing a trend that in most cases began some years before. The prolonged erosion of graduate enrollments in some of these basic academic disciplines has reached debilitating proportions on several campuses. Combined with the reverse pattern of vigorous growth in a few fields, some campuses are being faced with adjustments that promise to alter the essential character of their curriculum and eventually at the institution itself. A more detailed examination of these trends on individual campuses appears in the following section of this report.

The declining numbers of State University degrees in some of the humanities and social sciences is directly due to their being deserted by men. In the biological sciences, fine arts, mathematics, and psychology, the number of women receiving master's degrees in the State University increased slightly since 1977-78. In letters and social sciences, however, reductions in the number of women earning degrees were proportionately heavy. The same was true in education, a field which still awarded one-third of all master's degrees in the system. Women also failed to increase their numbers in engineering over the five-year period, earning only 18 master's degrees in that field in 1981-82. In general, however, women continued their advances in graduate education in the State University, with significantly higher numbers of master's degrees in architecture, business, computer science, health professions, home economics, and public affairs. In all fields, women earned 56 percent of the master's degrees awarded by the California State University in 1982, and judging from current enrollment patterns are likely to extend that margin during the next few years.

Accredited Independent Colleges and Universities

Almost half of the master's degrees and more than half of the doctorates in California are being conferred by the state's accredited independent colleges and universities. Although these institutions awarded slightly fewer master's degrees in 1981-82 than in 1977-78, their number of degrees at both graduate levels remained quite consistent over the five-year period.

At the master's level, a heavy concentration of degrees is evident in business and management. The 4,528 degrees in this field in 1981-82 represented over 30 percent of all master's degrees awarded by independent colleges and universities and two-thirds of all master's degrees in business in California. As in the two public segments, women earning degrees in business accounted for a sharply increased percentage of the total. Perhaps coincidentally, the number of women receiving master's degrees in business from independent institutions increased by almost the same amount as their decline in education. Overall, the number of women earning master's degrees from independent institutions increased 22 percent in five years, while the number of men declined 12 percent -- a trend similar to that in the California State University. Unlike the pattern in the State University, however, male master's degree recipients in the independent institutions still outnumber women by a 60- to 40-percent margin.

In addition to awarding a major portion of the master's degrees in business in California, independent institutions also awarded 42 percent of all master's degrees in engineering and almost 40 percent of those in education. These colleges and universities, however, account for a disproportionately small percentage of graduate degrees in most of the liberal arts fields -- the biological sciences, letters, mathematics, and the physical and social sciences.

At the doctoral level, the most striking statistic for California's independent institutions is the 574 Ph.Ds awarded in psychology during 1981-82 -- representing almost one of every four doctorates conferred by this group of institutions that year, and as noted earlier, one-fifth of all Ph.Ds in psychology in the country. In only three other fields is the production of

doctorates by California's independent institutions noteworthy: In 1981, they awarded 69 percent of all doctorates in business in California, 63 percent of the doctorates in education, and 81 percent of those in the health professions. They also awarded a respectable 41 percent of the doctorates in engineering.

In most other fields, independent institutions accounted for considerably fewer doctorates than the University of California, despite awarding 22 percent more doctoral degrees overall than the University. Thus while California's independent institutions as a group have developed a significant capacity for graduate instruction in a few fields, their across-the-board curriculum strength does not compare with that of public universities as a group.

THREE

RECENT ENROLLMENT AND DEGREE TRENDS ON INDIVIDUAL CAMPUSES OF CALIFORNIA'S PUBLIC UNIVERSITIES

The impact of shifting patterns of graduate enrollments becomes forcefully apparent in statistics for specific degree programs on individual campuses. Aggregate national, state, segmental, and major field totals can suggest broad movements and overall trends, but enrollments and degrees for specific programs on specific campuses -- for the master's degree in general biology at Chico State, for example, or in business administration at Sacramento State, or in sociology at San Diego State -- illustrate how these trends manifest themselves as hard realities on the individual campuses.

The 39 displays in Appendix A on pages 75-115 below present a statistical record of graduate enrollments and degrees awarded in a range of degree programs on individual campuses of the University of California and the California State University in 1977-78 and 1981-82. For the most part, the subjects included here are those in which at least five campuses within the two segments offer graduate degrees. Similar statistics are available for all degree programs, but fields such as agriculture and natural resources, only a few with degree programs in 18 different specialized areas, are excluded from the following displays in the interest of space.

Most academic departments must expect some fluctuation in the numbers of graduate students they enroll over a five-year period. The larger departments, however, do not expect to lose half or more of their students in that short a time nor to double or triple their number. In a broad range of programs, increases or decreases of this magnitude have occurred since 1977-78. Many departments, accustomed to planning for sizable increases each year during the expansive 1960s and early 1970s, can deal relatively easily with increased numbers of applicants; if nothing else, they can simply restrict admissions. It is the recent loss of students in such numbers that is unprecedented and that complicates all areas of academic planning and administration, not only on each campus but systemwide as well.

The numbers in the displays of Appendix A testify to the dimensions of the problem. They are presented not to call attention to any particular campus or program but to document the significant redistribution of enrollments in the graduate schools of California's public universities during the past few years and to illustrate that in addition to trends that have attracted wide attention -- the growth of business and computer science and the declining popularity of the social sciences, for example -- other less publicized shifts in interest have been occuring that may prove to be equally significant.

Depending on one's particular interest, it would be possible to draw a variety of conclusions from the tables and figures of Appendix A. Without attempting to be comprehensive, the following observations point to several significant trends for individual programs among the various campuses:

- Biology: Graduate enrollments in general biology (Display 1) eroded on a broad scale. Of the 21 programs offered in both segments, 18 lost enrollments, 13 by 20 percent or more. All but two of the 17 programs in the State University suffered declines, and four of these programs awarded only five degrees each in 1981-82. The losses in general biology do not appear to have resulted from students moving into more specialized programs in botany, biochemistry, microbiology, or zoology. Especially in the State University, graduate enrollments in all these programs dropped sharply as well. Among all the natural science disciplines, only programs in biology have experienced appreciable losses in enrollment since 1977-78.

- Business Administration and Management: In view of the overall growth in business administration and management (Display 5), it is interesting to find that only 15 of the 22 master's programs gained in enrollments and that the other seven declined, one large program by more than 25 percent over the five-year period. It would be premature to interpret these figures as signs that demand for the MBA degree is leveling off. In all, three programs in the State University declined by more than 20 percent, while ten others increased by at least that much. Three of the University's four programs showed solid gains.

- Computer and Information Sciences: Programs in general computer and information sciences (Display 6) enjoyed the most consistent overall increases with 16 of 18 programs gaining in majors. Eleven of the 13 programs in the State University increased by more than 50 percent, while two of the four University programs more than doubled in size.

- Education: More graduate programs in education gained than lost students -- 12 showing increases and seven declining -- they fared unevenly during the past five years from campus to campus (Display 7). Among the specialized programs in education, those in physical education were especially hard hit (Display 8). Thirteen of 18 lost enrollment. Seven graduate programs in physical education within the State University declined in enrollment by more than 20 percent. Overall enrollments in the University, with a much smaller total, gained slightly.

- Engineering: As expected, a majority of programs in all branches of engineering showed impressive gains, as half of all programs in the major specialties increased by more than 20 percent (Displays 9 through 13). Within the State University, civil electronic, mechanical, and four of the general engineering programs showed strength. Although one-third of all programs in general engineering and the engineering specialities listed here lost enrollments, there is no indication that demand for engineering programs is on the wane.

- Fine and Performing Arts: In general, enrollments in the University's graduate programs in the arts of painting, drawing, and sculpture held firm in the face of overall declines in these subjects nationally and in other California institutions (Display 14). Eight of ten University programs in drama and music enjoyed healthy increases (Displays 15 and 16), and the five programs in art remained intact. In the State University, on the other hand, 25 of the 31 programs in these subjects were down in enrollment, 18 by more than 20 percent. (Professional programs in

music leading to the Master of Music degree, with fewer students than the liberal arts programs, increased in both segments.)

- Foreign Languages: In no other discipline did programs sustain as consistent and broadscale losses as in the foreign languages (Displays 17, 18, and 19). Of the 42 graduate programs in French, German, and Spanish offered by both segments, 37 lost enrollments; half of all programs in these languages lost more than 20 percent of their students between Fall 1978 and Fall 1982. Furthermore, these programs averaged fewer degrees per program than in any other basic disciplinary category. Three-fourths of the programs awarded five or fewer master's degrees in 1981-82, and only one of the 13 programs in French and German on University campuses conferred more than three doctorates.

- Letters: Programs in those disciplines grouped under Letters -- English, comparative literature, classics, speech, philosophy, and linguistics, which taken together constitute the main core of the humanities -- did not fare well in the period between 1978 and 1982 (Displays 21 through 26). Although combined enrollments in these subjects was virtually unchanged in the University, twice as many individual programs lost as gained students. In English and and philosophy, however, the number of programs that grew in enrollment equaled those that declined, which compared to conditions elsewhere can be viewed as a positive development. The State University programs in these subjects suffered serious losses. Enrollments in 16 of 19 master's programs in English and five of six programs in philosophy declined, as did those in all six programs in linguistics. No program in philosophy and only four of the ten programs in speech awarded more than five master's degrees in 1982. Six of the State University's graduate programs in English have lost more than one-third of their enrollments since 1978.

- Mathematics: Even though more than half of all graduate programs in mathematics (Display 27) and the physical sciences (Displays 28, 29, and 30) had fewer students in Fall 1982 than in Fall 1978, enrollments overall in these disciplines remained stable in both public segments over the five-year period. It is noteworthy, however, that a majority of the State University programs in mathematics, chemistry, and physics awarded five or fewer master's degrees in 1981-82.

- Psychology: Graduate enrollments in most of the State University's psychology programs dropped sharply between Fall 1978 and Fall 1982, with 12 of the 16 programs showing losses (Display 31). This may point to a reversal of an upward trend in popularity that this field has enjoyed since the early 1970s. Graduate enrollments in psychology were also off in the University, although less severely. The number of graduate degrees awarded by the University was still up slightly from five years earlier.

- Public Administration: A curious disparity is apparent among programs in public administration within the State University (Display 32). Several of the recently established programs seem to be doing reasonably well, while most of the older programs sustained major losses -- one losing 60 percent and another half of its enrollment since 1978. More than in any other discipline, of course, enrollments in public administration

programs reflect the prevailing job market in local, state, and federal government.

- Social Sciences: In no other disciplinary group is there as great a contrast between the five-year records of graduate programs in the University and State University as in the social sciences (Displays 34 through 39). Bucking trends throughout the country, graduate enrollments in the University's programs in anthropology, geography, and political science actually increased during the last five years, while those in economics, history, and sociology decreased slightly. The experience of individual programs was more in keeping with the national trend as more programs lost than gained students in four of the disciplines, but even in these cases the declines tended to be moderate. The State University's graduate programs in the social sciences, however, present a pattern of devastating losses. All nine programs in anthropology and all 14 programs in history lost enrollment, as did eight of the ten programs in geography, ten of the eleven in political science, and eight of the ten in sociology. Only programs in economics were spared, although even here where five of the nine programs showed slight gains, one program lost 60 percent of its students between Fall 1978 and Fall 1982.

  In addition to the number of these social science programs losing enrollment, it is the magnitude of their losses that is alarming. Three-fourths of all programs currently offered in these disciplines lost at least 20 percent of their enrollment in the past five years, and many lost far more. Losses of 40 and 50 percent were not uncommon. The number of degrees awarded is another indication of the frail status of most of these programs. Only two of the 63 programs in the social science disciplines awarded more than ten master's degrees in 1981-82; while a large majority awarded fewer than five.

Although a comprehensive listing of the enrollments and degrees conferred by individual programs provides one basis for assessing the relative vitality of different fields of study, it is important to recognize the limitations of statistics presented in this form. In the first place, the number for any one year may be anomalous -- always a possibility when using five-year intervals, since the record for the preceding or following year might lead to a quite different conclusion. Furthermore, some programs that lost enrollment may have been overpopulated, and a reduction in the number of their students could enhance their vitality and effectiveness. And programs with similar titles may vary markedly in emphasis and approach, each one valuable for its contribution to the goal of diversity in the offerings of public colleges and universities in the State.

All these conditions notwithstanding, these displays allow for a detailed and reasonably accurate impression of the tendencies in graduate enrollments during the past five years in California's public universities. They also constitute a necessary piece of background information that along with other considerations must enter into planning and policy decisions from the individual department to the systemwide and statewide levels.

FOUR

ETHNIC MINORITY AND FOREIGN STUDENTS IN CALIFORNIA'S PUBLIC UNIVERSITIES

Any discussion of ethnic minority or foreign enrollments must be prefaced with certain qualifications concerning the accuracy of the statistics on which it is based. As an earlier Commission report stated, "of all the information developed, collected, and reported by a campus in the course of an academic year, student ethnicity data undoubtedly present the most difficult challenges" (California Postsecondary Education Commission, 1982, p. ix). Briefly, the major difficulties associated with data on student ethnicity or non-resident alien status arise from having to depend on individual students declaring their ethnic identification and resident status on a more or less voluntary basis at the time of registration, while institutions have neither the means to verify the accuracy of each student's response nor the authority to require responses from all students. In addition, changes by the federal government in reporting categories have made year-to-year comparisons difficult. Despite these and other problems attendant upon gathering ethnic and non-resident alien data, the figures presented in this section represent responses of between 80 and 90 percent of all students in the University of California and the California State University and are as reliable as any available.

MINORITY STUDENTS AND DEGREE RECIPIENTS

Minority students are those who identify themselves as either Black Non-Hispanic, Hispanic, Asian (including Pacific Islanders and Filipino), Native American, or other non-white. As Table 9 shows, students in these ethnic groups increased as a percentage of total enrollment and degree recipients at all levels in both the University and State University during the past five years.

TABLE 9 Minority Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982

	University of California		The California State University	
Level of Enrollment or Degree	1978	1982	1978	1982
Lower Division Students	24.6%	29.5%	30.9%	31.7%
Upper Division Students	20.4	24.4	25.6	28.2
All Undergraduate Students	22.5	26.9	28.2	29.9
Bachelor's Degree Recipients	17.7	20.9	19.6	23.8
Graduate Students	15.3	18.5	22.1	24.1
Master's Degree Recipients	17.4	20.9	20.3	22.5
Doctoral Degree Recipients	16.6	23.2		

Source: California Postsecondary Education Commission.

It is also apparent from Table 9 that the percentage of minority graduate students and degree recipients has been keeping pace with that of undergraduates and bachelor's degree recipients. In the State University, the graduate level actually exceeded the percentage earning the baccalaureate both in 1978 and 1982. Particularly impressive has been the growth in the percentage of minority students among those receiving the doctorate at the University of California -- from 16.6 percent in 1978 to 23.2 percent in 1982. This latter percentage was higher than that for either bachelor's master's degree recipients at the University that year. Even if these percentages for 1982 turn out to be somewhat abnormal, if persistence rates hold up, the healthy increases in minority enrollments since 1978 will be reflected in gains among degree recipients received as well.

Overall, the figures in Appendix A on pages 75-115 also present a positive picture of the participation of minority groups, taken as a whole, in graduate education at both the University and State University at the present time.

Enrollments and Degree Recipients Among Specific Minority Groups

Data on the participation of specific minority groups, analyzed individually, lead to a different impression for some groups from that of minority students as a whole. Just as certain ethnic groups are "under" or "over" represented at the undergraduate level compared to their percentage of California's general population, so too are they at the graduate level, both in overall enrollments and in various fields of study. Table 10 presents statistics relating to the participation of California's three largest minority groups -- Asian, Black, and Hispanic Americans -- in graduate education in the University of California and the California State University as of 1978 and 1982. It reveals that the percentage of Asian and Hispanic students and degree recipients increased at all levels in both segments since 1978, while the percentage of Black students and degree recipients fell in nine of the ten categories -- the one exception being bachelor's degree recipients at the State University. Trailing Blacks in the percentage of graduate degrees earned in 1978, Hispanic students have overtaken and surpassed them since then at both the University and State University. In the University, Asian students receive a higher percentage of master's and doctor's degrees than Black and Hispanic students combined. In the State University, however, the pattern differs: There the combined percentage of Black and Hispanic students and degree recipients surpasses that of Asian students, with the percentage of Hispanic students almost equallying the Asian student percentage.

Comparing the participation of undergraduates and graduate students in each ethnic group, the percentage of Black and Hispanic students among the University's graduate students exceeds their percentage of its bachelor's degree recipients, although the percentage for Asian students is lower. In the State University, all three ethnic groups represent a higher percentage of those enrolled in graduate programs than of those who receive bachelor's degrees.

The decline between 1978 and 1982 in the percentage of Black students enrolled in graduate programs and earning graduate degrees at both the University and State University is notable. At the undergraduate level, the

TABLE 10 Selected Ethnic Minority Group Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982

Minority Group and Level of Enrollment or Degree	University of California 1978	University of California 1982	The California State University 1978	The California State University 1982
ASIAN				
Undergraduate Students	10.8%	13.9%	7.2%	9.2%
Bachelor's Degree Recipients	9.0	11.2	6.0	7.7
Graduate Students	7.0	9.6	6.7	7.8
Master's Degree Recipients	6.2	7.7	5.4	6.2
Doctoral Degree Recipients	4.1	6.4		
BLACK				
Undergraduate Students	3.9	3.9	7.8	6.6
Bachelor's Degree Recipients	3.0	2.4	4.7	4.9
Graduate Students	3.9	3.7	5.6	5.1
Master's Degree Recipients	3.7	2.7	5.4	5.0
Doctoral Degree Recipients	2.6	2.2		
HISPANIC				
Undergraduate Students	5.6	6.0	8.7	9.3
Bachelor's Degree Recipients	3.4	4.4	6.1	7.2
Graduate Students	5.2	6.0	6.5	7.6
Master's Degree Recipients	2.7	4.3	4.7	5.7
Doctoral Degree Recipients	1.9	2.9		

Source: California Postsecondary Education Commission.

pattern is mixed. There, Black enrollments, although down from 7.8 to 6.6 percent in the State University, held steady at 3.9 percent in the University. The trend in bachelor's degrees earned by Black students was reversed, however: ahead in the State University and off considerably in the University. The decline of Black student participation in graduate education at both institutions cannot be attributed entirely, therefore, to trends at the baccalaureate level. The causes for this decline need to be explored further, because the post-baccalaureate advances of Black students during recent decades seem to be slipping away.

Distribution of Ethnic Minority Students Among Fields of Study

The specific academic programs most frequently chosen or avoided by various minority groups are as significant as their overall enrollment percentages. Table 11 on page 63 shows the most and least popular University and State

University graduate programs for Asian, Black, and Hispanic students in 1982, based on their representation in that field being above or below their representation among all graduate enrollments by 20 percent or more. This table is drawn from the data in Appendix B on pages 117-122, which indicate the enrollment percentage of all ethnic groups, including whites, for all discipline categories in 1978 as well as 1982.

Table 11 is not meant to suggest that minority students should distribute themselves equally among programs in the curriculum or that their distribution across all fields should approximate that of the majority white student population. Nor is it intended to imply that certain programs are preferable, either as to intellectual attainment or to career advantage. But the fact that students from certain minority groups concentrate heavily in a few programs and not in others is important for institutional planning and a variety of other educational purposes.

Asian Students: Asian graduate students show a strong concentration in mathematics at both the University of California and the California State University and in the sciences at the State University, but the most distinctive element of their enrollment pattern is their high concentration at both segments in engineering and computer science. As Table 11 shows, they constitute 20.4 percent of all graduate engineering students at the University and 30.5 percent of those at the State University, and they account for 14.8 percent of computer science programs in both segments. Their percent of all engineering students at the University is 17 times higher than that of Blacks and 12 times higher than that of Hispanics -- 1.2 percent and 1.7 percent of the total, respectively. The disparity in State University engineering programs is almost as dramatic. Moreover, this gap has been widening as the percentage of engineering students who were Asians grew in both segments between 1978 and 1982, while the percentage that were Black and Hispanic dropped.

Asian students as a group are less drawn to the humanities and social sciences than to the physical sciences, although even in most of these disciplines they are relatively well represented. Thus, their pattern of enrollments, after allowing for their extraordinarily high concentration in engineering and computer science, is reasonably even across the curriculum.

Black Students: For Blacks, this enrollment pattern is different. No field of study attracts an exceptionally heavy concentration of them, while many of the traditional arts and sciences disciplines enroll a much smaller percentage than might be expected. For example, they make up less than 2 percent of the University's graduate students in mathematics, biological sciences, physical sciences, and foreign languages, and just over 2 percent in the disciplines classified as letters. They represent an equally small portion of the enrollments in these fields at the State University as well.

Moreover, Black students are not well represented in computer science or engineering programs in either segment, although they have made some definite gains in computer science programs since 1978, especially at the University, where their representation increased from 0.6 to 2.3 percent. Their highest concentrations are in public affairs and services and in education, with a

TABLE 11: Popular and Unpopular Fields of Study for Asian, Black, and Hispanic Graduate Students in the University of California and the California State University, Fall 1982

Ethnic Group	University of California		California State University	
ASIAN High:	Engineering	20.4%	Engineering	30.5%
	Computer Science	14.8	Computer Science	23.9
			Mathematics	15.5
			Business	11.4
			Biological Sciences	9.4
Average:		9.6		7.8
Low:	Public Affairs	7.7	Library Science	6.0
	Home Economics	7.2	Public Affairs	4.7
	Agriculture	5.7	Social Sciences	4.3
	Fine Arts	5.5	Education	4.1
	Social Sciences	4.8	Psychology	3.8
	Letters	4.6	Agriculture	3.5
	Education	4.4	Communications	3.2
	Psychology	4.4	Letters	2.8
	Foreign Languages	4.3		
	Library Science	3.2		
	Communications	1.5		
BLACK High:	Public Affairs	6.8	Public Affairs	10.1
	Education	6.2	Psychology	6.1
	Architecture	5.4		
Average:		3.7		5.1
Low:	Business	3.5	Fine Arts	3.4
	Communications	2.9	Biological Sciences	3.2
	Computer Science	2.3	Letters	3.0
	Letters	2.1	Computer Science	2.9
	Mathematics	1.9	Business	2.6
	Library Science	1.8	Foreign Languages	2.6
	Agriculture	1.5	Library Science	2.4
	Biological Sciences	1.4	Physical Sciences	2.2
	Engineering	1.2	Engineering	2.2
	Foreign Languages	1.0	Architecture	1.9
	Physical Sciences	0.8	Agriculture	0.6
	Home Economics	0.0		
HISPANIC High:	Foreign Languages	18.4	Foreign Languages	27.2
	Public Affairs	11.4	Social Sciences	10.8
	Education	8.3	Public Affairs	10.5
	Library Science	7.4	Education	9.9
	Architecture	7.3		
	Psychology	7.2		

Table 11 (continued)

Ethnic Group	University of California		California State University	
Average:		6.0		7.6
Low:	Fine Arts	4.6	Mathematics	5.8
	Letters	3.3	Letters	5.3
	Biological Sciences	3.2	Health Professions	5.0
	Communications	2.9	Biological Sciences	4.6
	Physical Sciences	2.7	Engineering	4.2
	Agriculture	2.4	Communications	3.8
	Computer Science	2.9	Physical Sciences	3.3
	Engineering	1.7	Business	3.3
	Home Economics	0.0	Computer Science	3.1
			Home Economics	3.0
			Agriculture	2.6
			Library Science	1.2

Source: California Postsecondary Education Commission staff calculations of fields in which minority student enrollments are 20 percent higher or lower than their overall percentages reported in Table 10.

strong showing also in architecture and environmental design at the University, and in psychology at the State University. Between 1978 and 1982, they showed solid gains in business at the University, but fell back in the State University.

Thus despite favorable signs in a few fields, the trend in Black student enrollments during the past five years has not been overly encouraging.

Hispanic Students: The record of Hispanic students since 1978 is more impressive, showing gains in a majority of disciplines at both segments. With a heavy concentration in Spanish, they are also highly represented in education and in public affairs and services. Unlike Black students, Hispanics increased their percentages in mathematics and the biological, physical, and social sciences at both the University and State University since 1978. Hispanics more than doubled their representation in computer science at the State University and almost doubled it at the University. Only in engineering at both segments did their percentage drop noticeably.

Despite these advances of Hispanic students across a broad front, however, Table 11 shows that in a variety of basic disciplines their percentage, as is the case with Black students, falls considerably below their overall average. As noted earlier, much of this uneven distribution is not necessarily a cause for alarm, since the distribution of students from all ethnic groups among all fields of study cannot be expected to be the same. Nonetheless, the widespread participation by all ethnic groups across the broad range of academic disciplines at an advanced level of scholarship and research remains more a hope and a goal than a likelihood for the foreseeable future. That this goal is currently complicated by poor employment prospects in many of the basic disciplines -- a problem discussed earlier in this report -- should not result in any less effort directed toward its eventual realization.

FOREIGN STUDENTS AND DEGREE RECIPIENTS

Data on the citizenship of students in this section probably understate the number of non-resident aliens enrolled in the University of California and the California State University. Only those students who declare themselves to be non-resident aliens are regarded as foreign students in this report. Resident aliens are not included, and those students who "decline to state" are assumed to be residents of the United States.

Table 12 below shows the percent of foreign undergraduates and graduate students at the University and the State University during 1977-78 and 1982-83 as well as the percentage of degrees awarded to foreign students in 1978 and 1982. As can be seen, these percentages have remained relatively constant between the two years with only two exceptions, both of them involving degree recipients at the State University: (1) Foreign students received only 3.8 percent of its bachelor's degrees in 1978 but 7.2 percent in 1982; and (2) they earned only 6.4 percent of its master's degrees in 1978, compared to 15.3 percent in 1982.

Table 12 also shows that while foreign students constitute only about 3 percent of undergraduates in both segments and only 5.0 percent of graduate students in the State University, they make up 17 percent of graduate enrollments at the University and in 1982 received 20.4 percent of its master's degrees and 24.8 percent of its doctorates. Overall, of the 17,727 graduate degrees awarded by the University and State University during that year, 3,202 were earned by non-resident aliens -- or almost one out of every five.

TABLE 12 Foreign Students and Degree Recipients as a Percent of the Total in the University of California and the California State University, 1978 and 1982

Level of Enrollment or Degree	University of California		The California State University	
	1978	1982	1978	1982
Lower Division Students	2.1%	2.1%	2.5%	2.6%
Upper Division Students	2.9	3.4	3.3	3.6
All Undergraduate Students				
Bachelor's Degrees	3.1	3.4	3.8	7.2
Graduate Students	17.6	17.2	4.3	5.0
Master's Degree Recipients	17.8	20.4	6.4	15.3
Doctoral Degree Recipients	23.4	24.8		

Source: California Postsecondary Education Commission.

The disparity between the percentage of foreign student enrollments and their percentage of degree recipients is particularly evident in the State University -- as of 1982, a three-fold difference of 5.0 percent compared to 15.3. For any given year, enrollment and degree recipients figures may vary because of fluctuations in the number of foreign students admitted during preceding years. But the significantly higher percentage of the State University's foreign student graduate degree recipients than its graduate enrollments in 1982 do not seem to result from a higher than usual percentage having been admitted in 1979 or 1980. Some of the discrepancy probably stems from the fact that more foreign than domestic students are enrolled full time; also many domestic students are lured away by industry before completing -- if not before even beginning -- a graduate program. But other possible causes should be explored, however, especially when in several of the so-called "high tech" fields over 40 percent of the master's degrees conferred by the University and State University in 1982 and over half of the doctorates awarded by the University went to foreign students.

Table 13 on the next page lists the fields of study enrolling the highest and lowest percentages of foreign students at the University and State University, compared to their average enrollment of 17.2 percent at the University and 5.0 percent at the State University.

As might be expected, foreign student enrollment distributes itself in a highly uneven pattern among the disciplines, reaching surprising high levels of engineering, and computer science, while remaining negligible in others.

As Table 13 shows, well over 40 percent of all graduate degrees awarded by the University and State University in three engineering specialties in 1982 went to foreign students. In other fields of engineering, as well as in mathematics, computer science, and physics, foreign students also earned degrees at a rate far out of proportion to their numbers in the student body as a whole.

Other fields attracting a higher than average percentage of foreign students include economics, linguistics, and German at both the University and State University and French at the State University although it should be noted that in fields in which few American students enroll, a relatively small number of foreign students can amount to a sizable percentage. Conversely, the percentage of business administration students who are from other countries is unimpressive -- only 12.4 percent at the University and 6.7 percent at the State University -- even though their actual numbers surpass those in most other disciplines.

Just as many of the same graduate programs in both segments attract high numbers of foreign students, so there is a high correspondence in the two segments between fields with negligible foreign student enrollment. These fields include the "helping professions" of nursing, education, social work, and psychology, the biological sciences, and understandably, English and speech.

If the enrollment of foreign students was more evenly spread across the curriculum, it would neither call attention to itself nor present any serious planning or policy issues. Heavily concentrated in a few fields however, it raises questions significant at both the State and national levels.

TABLE 13 University of California and California State University Programs Enrolling the Highest and Lowest Percentage of Foreign Graduate Students in Fall 1982

Institution and Program	Percent of Foreign Students	Percent of Master's Degree Recipients	Percent of Doctoral Degree Recipients
UNIVERSITY OF CALIFORNIA			
Civil Engineering	46.1%	48.1%	43.8%
Mechanical Engineering	39.6	31.8	52.2
Electrical Engineering	37.6	41.8	57.5
General Engineering	32.2	32.8	40.9
Economics	31.3	28.3	20.0
Mathematics	27.9	25.5	34.0
Physics	26.8	31.4	21.6
German	26.2	25.0	0.0
Computer Science	25.6	18.2	52.6
Philosophy	25.0	20.0	11.1
Linguistics	24.6	28.6	16.7
AVERAGE	17.2	20.4	24.8
Spanish	9.9	14.3	16.7
History	9.8	14.7	0.0
Art	9.5	8.6	0.0
Speech	9.1	25.0	0.0
Biology	8.0.	5.0	11.5
Psychology	6.5	11.5	0.0
Education	6.4	11.6	12.0
English	5.7	9.1	0.0
Nursing	4.7	2.7	0.0
Social Work	2.1	2.4	9.1
THE CALIFORNIA STATE UNIVERSITY			
Comparative Literature	27.3	0.0	
Economics	24.1	52.8	
Mechanical Engineering	23.0	48.1	
French	21.1	43.8	
Civil Engineering	20.6	43.8	
Electrical Engineering	18.8	41.9	
Linguistics	18.4	26.2	
Chemistry	17.7	30.6	
Microbiology	17.3	10.0	
Computer Science	16.5	37.8	
Political Science	13.6	37.5	
German	13.3	44.4	
Sociology	12.9	0.0	
General Engineering	12.7	34.4	
Chemical Engineering	12.5	14.3	
Biochemistry	11.1	50.0	
Mathematics	11.1	32.3	
Physics	10.2	21.0	

(continued)

TABLE 13 (continued)

AVERAGE	5.0	15.3
Biology	3.2	20.6
Physical Education	3.1	19.7
Education	2.1	6.8
Psychology	2.1	13.9
Social Work	1.7	6.2
Nursing	0.9	5.0
Botany	0.0	0.0
Classics	0.0	0.0

Source: California Postsecondary Education Commission.

CONCLUSIONS

This report has assembled a variety of statistical information related to graduate education in California, presented tables and charts for displaying and updating this information, and identified certain issues -- especially those involving program planning and review -- that emerge from the data or are affected by it.

Recognizing that the nature and present condition of graduate education can never be captured by numbers alone, the report nevertheless assumes that such figures are essential for an informed consideration of the issues and that it is useful, if only in some cases for future reference, to condense as much numerical information into as brief a space as possible. The previous chapters, resulting from such an approach, have been crammed with enrollment and degree statistics, but this has seemed unavoidable given the purpose of the report. Even so, they have not contained still other kinds of statistical information that would be valuable for a variety of analytical purposes. A thorough statistical analysis will require, in addition:

- Data in all categories from the accredited independent universities in California.

- Data on the ratios of applications to acceptances in all programs. This ratio is as revealing of the health of a program as the number actually enrolled. Presumably one indication of a program's quality is its selectivity in admitting students.

- A more complete description of student characteristics, including sources of financial aid and the level of indebtedness, the number employed full time, age, time to degree, and the placement experience of recent graduates.

- Information on the relative costs of individual programs and of the enterprise as a whole. It would be a great convenience in planning and review to be able to assume that a graduate program, for example, in music or engineering generally costs twice as much as one in history or business, but the process of computing costs of degree programs remains too complex and controversial for that to be a realistic expectation. But the overall costs of graduate education, including the State's contribution to it, can be estimated and displayed in a variety of formats.

When assembled, these additional pieces of information will help complete the profile of graduate education in the State and allow for a more thorough analysis of its condition.

In the meantime, a number of conclusions can be drawn from the material included in this report. Some of the conclusions translate directly into issues or they relate to perennial issues associated with public higher education. Because graduate education in the public institutions is a State-supported activity, most of the issues surrounding it have public policy implications. The following seven conclusions relate to conditions that, in the Commission's judgment, require immediate attention:

1. IN SEVERAL DISCIPLINES, THE UNIVERSITY OF CALIFORNIA OFFERS MORE DOCTORAL PROGRAMS THAN NECESSARY TO ACCOMMODATE STUDENT DEMAND OR THE NEEDS OF SOCIETY FOR DOCTORATES IN THOSE DISCIPLINES.

The importance to the State and nation of disciplined intelligence, whatever its field of special competence, is inestimable. Advanced education cannot be regarded merely as an article of commerce. The need for highly educated persons cannot be measured as would the need for so many consumer goods. Who is to say how many philosophers or literary critics a society needs? No formula applies here.

Still, it is necessary to question the offering of six Ph.D. programs in a subject when three could not only accommodate all qualified students interested in doctoral study in the subject, but prepare more than enough graduates to fill available openings. That is no longer a question to come only from cost-conscious bureaucrats insensitive to the finer purposes of advanced scholarship. It is dictated by the reality of present circumstances. There are too few students choosing to pursue graduate study in certain subjects and not enough jobs for those who do. Nor is there hope that a change is imminent. As noted earlier in this report, the prospects of a renewed demand for Ph.Ds in many of the humanities and social science disciplines occurring soon are "bleak." By the mid-nineties, when the size of the college-age population is expected to approach earlier levels and a large portion of present faculty members reach retirement age, the demand for doctorates in most disciplines may again pick up. Few, however, foresee a marketplace as favorable to applicants for faculty positions as existed in the 1960s.

2. APART FROM CONSIDERATIONS OF STUDENT DEMAND AND THE IDENTIFIABLE NEEDS OF SOCIETY, SOME DOCTORAL PROGRAMS HAVE PRODUCED SO FEW GRADUATES DURING THE PAST FIVE YEARS THAT THEIR VIABILITY IS QUESTIONABLE.

Most efforts to assess the quality of graduate programs -- however controvertible the process remains -- include size of programs as one of the criteria. The assumption is not that the bigger the program the better, but that an effective program requires a certain minimum number of faculty and students -- a "critical mass" -- to interact, stimulate, challenge, and reinforce. While the number necessary for critical mass undoubtedly varies with circumstances, a program that awards only two or three doctorates over a five-year period probably lacks it. No degree programs should be condemned on the basis of quantative measures alone. Some small programs, because of an exceptionally capable individual or group of individuals, are influential out of all proportion to their size. Other programs without impressive numbers may contribute in essential ways to the environment for scholarship on a given campus. Some may have special importance to undergraduate education. But a program producing no more than one or two graduates in five years must at least expect to show why, if it is graduating this few students, it should continue to be supported.

Thus in the interest of quality as well as economy of means, a consolidation of doctoral programs in several disciplines seems in order. Such a move should have little effect on the number of doctorates being trained in these

disciplines. It could very well enhance the richness and breadth of their training. Among the disciplines in which consolidation of doctoral programs should be considered are foreign languages, comparative literature, philosophy, psychology, history, geography, political science, and sociology. (See Displays 1 through 39 in Appendix A.)

3. GRADUATE PROGRAMS IN MOST OF THE LIBERAL ARTS DISCIPLINES ON CAMPUSES OF THE CALIFORNIA STATE UNIVERSITY ARE SUFFERING FROM ENROLLMENT LOSSES OF DEBILITATING PROPORTIONS. UNLESS RECENT TRENDS CAN BE ARRESTED SOON, MANY PROGRAMS WILL BE UNABLE TO SUSTAIN THEMSELVES.

Several forces are affecting graduate programs in the State University. Those in the social sciences and humanities are victims of the pronounced shift of interest to business and technical fields evident throughout the country. Consequently, those in applied fields, such as business, engineering, computer science, nursing, and social work, are currently thriving. In the job market, holders of master's degrees are likely to be squeezed out in those fields with a surplus of Ph.D.s. While some Community Colleges are said to find those with master's degrees more suitable than doctorates for their instructional staffs, these institutions have not been hiring enough full-time faculty to take up the slack. Thus the market value of the master's degree in a number of subjects has declined, and because of the quantity of degrees awarded during the past 20 years, so has its prestige.

It must be noted that while many graduate programs in the State University have experienced enrollment losses of between 30 percent to 50 percent since 1978, some few programs in even the hardest hit disciplines seem to be holding up reasonably well. Examples of both conditions can be found in the displays of Appendix A.

As noted above, one key indicator of the health of a degree program is the annual record of degrees it awards. None of the State University graduate programs in mathematics, speech, philosophy, political science, sociology, geography, economics, physics, French, or German awarded more than ten degrees in 1982, and many did not award five. The ten master's degree programs in sociology conferred a total of 34 degrees, while the six programs in philosophy awarded only eight degrees altogether.

Again, programs are not to be judged by numbers alone. Moreover, the "service area" concept within the State University argues for making a number of programs available primarily as a service to citizens of the region. But the statistical evidence of a broad-scale erosion of interest in many of these programs cannot be ignored, and the comprehensive curriculum recommended by the service-area approach applies less at the graduate than at the undergraduate level.

The Chancellor's Office of the State University is, of course, aware of and concerned about these developments in its graduate programs. The decision, it seems, is whether to do nothing out of the ordinary -- to allow the large number of graduate programs losing enrollments and awarding few degrees to limp along until some of them expire altogether -- or to confront the situation directly by sorting out the strong from the weak programs in each discipline and then, by various means, reinforcing and revitalizing those

which might still achieve or maintain distinction. Some may have to be phased out. The argument here is that it is in the public interest to support three or four vigorous graduate programs in a discipline rather than twice as many anemic ones.

4. BETTER INFORMATION ON THE JOB PLACEMENT OF MASTER'S DEGREE RECIPIENTS IS URGENTLY NEEDED.

Much can be done to insure the availability of certain kinds of evidence about the master's degree not only for prospective students but for all those responsible for academic planning and policy formation. As a start, campuses should maintain, as standard procedure, records of the employment status of all master's degree recipients. Many departments have routinely collected this information. In fact, for a school or department not to strive for an accurate account of the job placement experience of its graduates seems inexcusable. Yet there is no single convenient source for composite information of this kind, for learning how recent recipients of Master of Public Administration degrees from California institutions, for example, have fared in their search for employment.

The goal should be to establish a file of information for master's degree recipients similar to that which exists nationally for doctorates as a result of the National Research Council's annual surveys. For many reasons, it is important to know how many of those earning master's degrees in any field are still seeking employment, how many are already employed, in what sector they are employed, whether they are in a job closely related to their academic preparation, and how many plan to pursue the doctorate.

Because of the broad range of questions surrounding the master's degree, establishing a procedure for compiling placement records for those receiving the degree can be viewed as a matter of some urgency. Such information alone could not be counted on to answer all questions, but it could certainly throw light on issues that are or soon will be facing every department offering a master's degree. For example, there are growing signs of an M.B.A. "glut" which if it were to materialize would profoundly affect not only departments of business and management but the entire graduate school on many campuses. In some fields, a temporary oversupply may give way to renewed demand because of sustained periods of low enrollments -- library science and social work are possible examples. In others, demand may not pick up for years. In still others, such as the humanities and social science subjects with a surplus of Ph.D.s, the master's degree may never recover its market value.

Collecting first-hand information on their employment experience from all recent graduates will add to the data-gathering burden of the system, but a reliable record of this kind seems well worth the effort. It could provide invaluable clues to developments in the marketplace that will influence the condition of graduate education..

5. AN INTENSIVE ACROSS-THE-BOARD REVIEW OF THE MASTER'S DEGREE AS AN ACADEMIC AWARD IS NEEDED.

At least two distinct tendencies currently exist regarding the master's degree. In fields of study not directly linked to specific career outlets --

disciplines commonly thought of as constituting the liberal arts -- the degree has lost much of its value both as an acknowledgement of academic achievement and as a credential for employment. In many technical or applied fields, on the other hand, the degree has increased in value in the sense that it has become a required credential for many positions, or that it is accepted as the terminal degree as in business, architecture, and the fine and performing arts, for example.

In a few career fields, such as computer science, the master's degree has established no clear niche for itself; in others, especially in areas where industry is setting up its own training programs, the role of the degree has become somewhat ambiguous.

In the face of such diversity and confusion, a clarification of the meaning and purpose of the master's degree in a wide range of fields is called for.

In the humanities and social sciences, the master's program as a small-scale doctoral program seems outmoded. In the applied fields, the changing requirements of employers may dictate revisions in the master's degree program. Within the business community, there are signs of a growing dissatisfaction with the graduates of M.B.A. programs (Special Reports on Key Business Topics, 1984, pp. 166-167). Therefore, the general public as well as prospective students would also benefit from a clearer understanding of what knowledge and skills the master's degree attests to.

Over a decade ago, a study committee of the 1971 All-University Faculty Conference concluded that "The M.A. and M.S. degrees have been so debased by their use as escape hatches from Ph.D. programs that they probably cannot be made useful once more for academic purposes . . . . It is probably more prudent to recognize this and attempt to shape the master's degree into one which can provide either a degree of specialization for those heading toward the lower ranks of a profession or alternatively to provide an additional level of breadth and integration for whose need is education in a general sense rather than preparation for competence in some specialty" (University of California, 1971, p. 30).

Since this observation was made, no formal review of the nature and purpose of the master's degree has been undertaken. It now should be. The Commission will initiate discussions with the segments concerning procedures for such a review.

6. HIGHER PERCENTAGES OF WOMEN ARE EARNING DEGREES IN MOST FIELDS OF STUDY -- A TREND IN EVIDENCE FOR ALMOST TWO DECADES.

   IN CONTRAST, THE PATTERN OF ETHNIC MINORITY PARTICIPATION IN GRADUATE STUDY IS MIXED. ASIAN STUDENTS REPRESENT A GROWING PROPORTION OF GRADUATE STUDENTS IN BOTH THE UNIVERSITY OF CALIFORNIA AND THE CALIFORNIA STATE UNIVERSITY. BLACK AND HISPANIC STUDENTS, HOWEVER, ARE POORLY REPRESENTED IN MANY FIELDS, DESPITE PERCENTAGE INCREASES IN HISPANIC ENROLLMENTS AND DEGREES EARNED.

The percentage of women earning master's and doctor's degrees in almost all disciplines has increased significantly in the State and nationally virtually

without interruption since the early 1960s. In 1982, women earned 56 percent of all master's degrees awarded by the California State University -- an increase of over 5 percentage points since 1978. The percentage gains of women in graduate degrees awarded by the University of California over the same period have been less pronounced, but here as well, women have continued to advance in most fields of study (Appendix C, pages 123-126).

Among ethnic minority groups, the record of Asian students is most impressive, but Hispanics have also shown solid gains in most graduate programs in both segments since 1978. The percentages of Blacks enrolled in graduate education and earning graduate degrees, however, appear to have dropped off slightly during the past five years. It is important to account for this decline, and with all minority groups, to continue to monitor closely their participation in formal education at the graduate level.

7. THE HEAVY CONCENTRATION OF FOREIGN GRADUATE STUDENTS IN A FEW DISCIPLINES RAISES POLICY QUESTIONS THAT REQUIRE ATTENTION.

In computer science and several of the major fields of engineering, more than half of the 1982 doctorates awarded by the University and roughly 40 percent of the master's degrees conferred by the State University went to non-resident aliens. This condition is by no means confined to institutions in California, although they enroll almost 20,000 more foreign students than are enrolled in any other state. Throughout the country the proportion of foreign students has increased steadily in every major science and engineering field since 1975. (National Science Foundation, 1984, p. 4).

In a recent study of foreign students and institutional policy, the American Council on Education noted that "ultimately . . . this nation's posture toward foreign students is going to be the aggregate of actions taken by the several state systems of higher education and the individual institutions. Given the potential increase in foreign applicants, it is imperative that the governing bodies of these systems and institutions . . . address what they will do with respect to foreign students and develop appropriate policies and procedures." (1982, p. 50).

Among other questions associated with these policies are the following:

- How are applications from foreign students dealt with during the admissions process?
- Are any qualified domestic students being denied admission to high-cost, high-demand graduate programs because of foreign student enrollments?
- How many foreign students remain in the State and nation after receiving graduate degrees here?
- What are the fiscal implications of a high percentage of foreign students in certain programs?

Such questions suggest the need for a more thorough investigation of the subject than has been possible in this report.

APPENDIX A

Graduate Enrollments and Degrees Awarded in Selected Fields of Study at California's Public Universities, 1978-1982

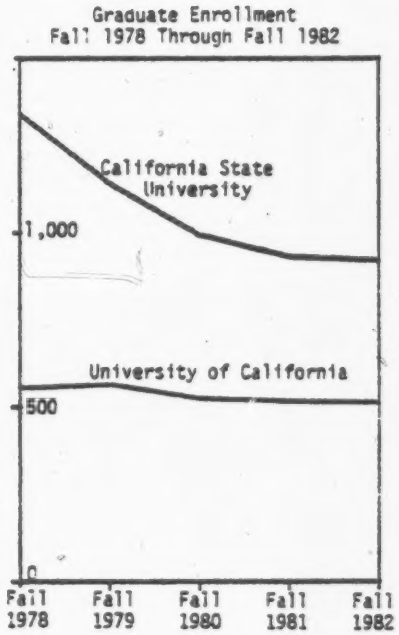
1. Biological Sciences: General Biology 77
2. Biological Sciences: Biochemistry 78
3. Biological Sciences: Botany 79
4. Biological Sciences: Microbiology 80
5. Business and Management: Business and Administration 81
6. Computer and Information Sciences, General 82
7. Education, General 83
8. Education: Physical Education 84
9. Engineering, General 85
10. Engineering: Chemical Engineering 86
11. Engineering: Civil, Construction, and Transportation Engineering 87
12. Engineering: Electrical, Electronics, and Communications Engineering 88
13. Engineering: Mechanical Engineering 89
14. Fine and Applied Arts: Art (Painting, Drawing, and Sculpture) 90
15. Fine and Applied Arts: Dramatic Arts 91
16. Fine and Applied Arts: Music (Liberal Arts Programs) 92
17. Foreign Languages: French 93
18. Foreign Languages: German 94
19. Foreign Languages: Spanish 95
20. Health Professions: Nursing 96
21. Letters: Classics 97
22. Letters: Comparative Literature 98
23. Letters: English 99
24. Letters: Linguistics 100
25. Letters: Speech, Debate, and Forensic Science 101
26. Letters: Philosophy 102
27. Mathematics, General 103
28. Physical Sciences: Chemistry, General 104
29. Physical Sciences: Geology 105
30. Physical Sciences: Physics, General 106
31. Psychology, General 107
32. Public Affairs and Services: Public Administration 108
33. Public Affairs and Services: Social Work and Helping Services 109
34. Social Sciences: Anthropology 110
35. Social Sciences: Economics 111
36. Social Sciences: Geography 112
37. Social Sciences: History 113
38. Social Sciences: Political Science and Government 114
39. Social Sciences: Sociology 115

NOTE: Asterisks in these displays indicate that percentage increases cannot be calculated because the zero divisor is an undefined operation.

DISPLAY 1 Biological Sciences: General Biology

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	17	17	0.0%
GRADUATE ENROLLMENTS			
University of California	557	513	- 7.9%
Percent Men	64.6%	61.6%	- 2.8%
Percent Minority	13.2%	16.4%	+ 3.2%
Percent Foreign	7.2%	8.0%	+ 0.8%
California State University	1,340	921	- 31.2%
Percent Men	62.6%	55.0%	- 7.6%
Percent Minority	14.2%	18.2%	+ 4.0%
Percent Foreign	3.9%	3.2%	- 0.7%
GRADUATE DEGREES			
University of California			
Masters	74	51	- 31.1%
Percent Men	54.8%	68.0%	+ 13.2%
Percent Minority	17.6%	8.7%	- 8.9%
Percent Foreign	8.7%	5.0%	- 3.7%
Doctors	64	54	- 15.6%
Percent Men	70.9%	66.7%	- 4.2%
Percent Minority	11.1%	15.0%	+ 3.9%
Percent Foreign	8.7%	11.5%	+ 2.8%
California State University			
Masters	227	197	- 13.2%
Percent Men	74.4%	65.4%	- 9.0%
Percent Minority	19.5%	23.5%	+ 4.0%
Percent Foreign	8.1%	20.6%	+ 12.5%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Fall 1982	Percent Change	Graduate Degrees: Masters 1977-78	1981-82	Percent Change	Doctors 1977-78	1981-82	Percent Change
University of California									
Los Angeles	180	147	- 18.3%	35	16	- 54.2%	21	20	- 4.7%
Riverside	54	36	- 33.3%	7	7	0.0%	5	2	-60.0%
San Diego	131	120	- 8.4%	4	0	-400.0%	14	14	0.0%
Santa Barbara	134	134	0.0%	23	24	+ 4.3%	17	12	-29.4%
Santa Cruz	58	76	+ 31.0%	5	4	- 20.0%	7	6	-14.2%
California State University									
Chico	37	15	- 59.4%	6	5	- 16.6%			
Dominguez Hills	23	29	+ 26.0%	8	5	- 37.5%			
Fresno	75	56	- 25.3%	13	10	- 23.0%			
Fullerton	74	72	- 2.7%	12	10	- 16.6%			
Hayward	68	30	- 55.8%	20	7	- 65.0%			
Humboldt	69	66	- 4.3%	8	13	+ 62.5%			
Long Beach	187	71	- 62.0%	23	12	- 47.8%			
Los Angeles	68	55	- 19.1%	8	8	0.0%			
Northridge	122	93	- 23.7%	17	15	- 11.7%			
Pomona	53	38	- 28.3%	7	8	+ 14.2%			
Sacramento	93	73	- 21.5%	11	14	+ 27.2%			
San Bernardino	4	19	+375.0%	4	5	+ 25.0%			
San Diego	169	112	- 33.7%	27	23	- 14.8%			
San Francisco	86	48	- 44.1%	25	37	+ 48.0%			
San Jose	98	75	- 23.4%	18	11	- 38.8%			
San Luis Obispo	44	24	- 45.4%	13	5	- 61.5%			
Sonoma	67	39	- 41.7%	7	9	+ 28.5%			

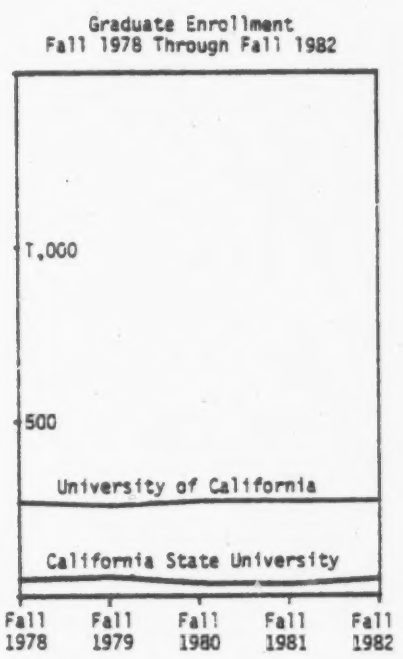
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 2 Biological Sciences: Biochemistry

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	1	1	0.0%
GRADUATE ENROLLMENTS			
University of California	268	272	+ 1.4%
Percent Men	71.3%	61.3%	- 10.0%
Percent Minority	12.7%	16.8%	+ 4.1%
Percent Foreign	7.6%	10.1%	+ 2.5%
California State University	48	48	0.0%
Percent Men	81.2%	58.3%	- 22.9%
Percent Minority	33.3%	48.5%	+ 15.2%
Percent Foreign	12.5%	12.5%	0.0%
GRADUATE DEGREES			
University of California			
Masters	30	19	- 36.6%
Percent Men	79.3%	75%	- 4.3%
Percent Minority	25.0%	33.3%	+ 8.3%
Percent Foreign	16.7%	0.0%	- 16.7%
Doctors	37	39	+ 5.4%
Percent Men	81.0%	74.3%	- 6.7%
Percent Minority	13.3%	22.6%	+ 9.3%
Percent Foreign	18.5%	14.3%	- 4.2%
California State University			
Masters	4	2	- 50.0%
Percent Men	25.0%	100.0%	+ 75.0%
Percent Minority	33.3%	0.0%	- 33.3%
Percent Foreign	0.0%	50.0%	+ 50.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	74	69	- 6.7%	4	2	- 50.0%	15	12	- 20.0%
Davis	70	64	- 8.5%	5	3	- 40.0%	12	3	- 75.0%
Los Angeles	55	65	+ 18.1%	13	7	- 46.1%	2	7	+250.0%
Riverside	50	55	+ 10.0%	7	6	- 14.2%	6	11	+ 83.3%
San Francisco	19	19	0.0%	1	1	0.0%	2	6	+200.0%
California State University									
Long Beach	24	20	- 16.6%	4	2	- 50.0%			

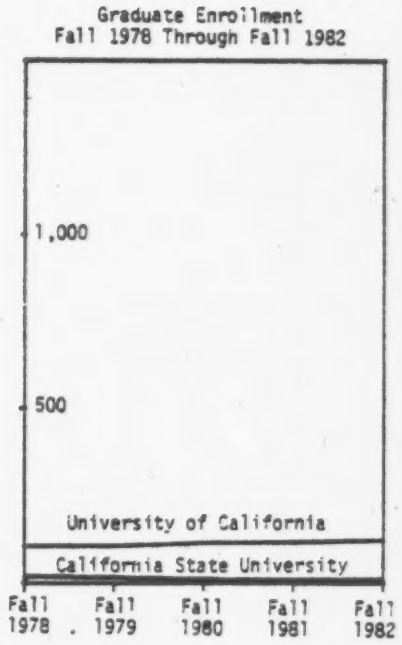
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 3 Biological Sciences: Botany

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	4	0.0%
California State University	1	1	0.0%
GRADUATE ENROLLMENTS			
University of California	107	126	+ 17.7%
Percent Men	72.9%	51.2%	- 21.7%
Percent Minority	10.8%	13.9%	+ 3.1%
Percent Foreign	21.7%	12.8%	- 8.9%
California State University	19	10	- 47.3%
Percent Men	64.7%	40.0%	- 24.7%
Percent Minority	--	--	--
Percent Foreign	0.0%	0.0%	0.0%
GRADUATE DEGREES			
University of California			
Masters	13	12	- 7.6%
Percent Men	53.8%	50.0%	- 3.8%
Percent Minority	16.6%	0.0%	- 16.6%
Percent Foreign	40.0%	100.0%	+ 60.0%
Doctors	15	21	+ 40.0%
Percent Men	86.7%	76.2%	- 10.5%
Percent Minority	28.6%	33.3%	+ 4.7%
Percent Foreign	33.3%	0.0%	- 33.3%
California State University			
Masters	2	2	0.0%
Percent Men	50.0%	100.0%	+ 50.0%
Percent Minority	--	--	--
Percent Foreign	0.0%	0.0%	0.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Fall 1982	Percent Change	Graduate Degrees: Masters 1977-78	1981-82	Percent Change	Doctors 1977-78	1981-82	Percent Change
University of California									
Berkeley	39	37	- 5.1%	0	2	*	8	5	0.0%
Davis	48	45	- 6.2%	7	7	0.0%	6	6	0.0%
Riverside	16	43	+168.7%	3	2	- 33.3%	1	7	+600.0%
Santa Barbara	4	1	- 75.0%	3	1	- 66.6%			
California State University									
Chico	8	5	- 37.5%	2	2	0.0%			

Source: California Postsecondary Education Commission.

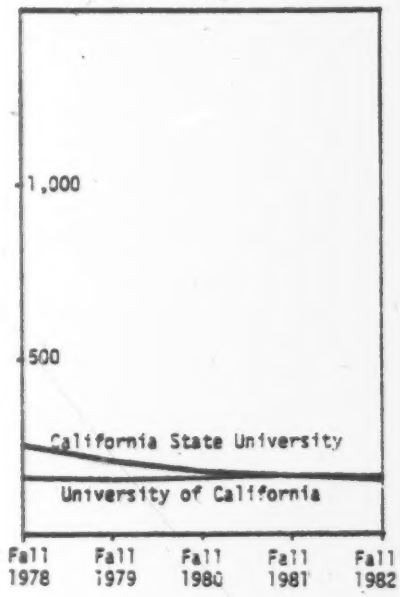
BEST COPY AVAILABLE

DISPLAY 4 Biological Sciences: Microbiology

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	4	0.0%
California State University	6	6	0.0%
GRADUATE ENROLLMENTS			
University of California	162	151	- 6.7%
Percent Men	57.4%	53.6%	- 3.8%
Percent Minority	12.7%	17.5%	+ 4.8%
Percent Foreign	14.5%	14.5%	0.0%
California State University	255	164	- 35.6%
Percent Men	50.2%	43.6%	- 6.6%
Percent Minority	28.9%	37.6%	+ 8.7%
Percent Foreign	13.0%	17.3%	+ 4.3%
GRADUATE DEGREES			
University of California			
Masters	15	7	- 53.3%
Percent Men	53.3%	33.3%	- 20.0%
Percent Minority	8.3%	0.0%	- 8.3%
Percent Foreign	7.7%	20.0%	+ 12.3%
Doctors	18	21	+ 16.6%
Percent Men	83.3%	63.2%	- 20.1%
Percent Minority	11.1%	21.4%	+ 10.3%
Percent Foreign	17.6%	12.5%	- 5.1%
California State University			
Masters	23	18	- 21.7%
Percent Men	39.1%	44.4%	+ 5.3%
Percent Minority	42.9%	25.0%	- 17.9%
Percent Foreign	66.7%	10.0%	- 56.7%

Graduate Enrollment
Fall 1978 Through Fall 1982



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	21	27	+ 28.5%	0	1	*	1	9	+800.0%
Davis	86	65	- 24.4%	13	5	- 61.5%	7	7	0.0%
Irvine	15	19	+ 26.6%	0	0	0.0%	0	2	*
Los Angeles	31	32	+ 3.2%	2	1	- 50.0%	10	2	- 80.0%
San Francisco	9	8	- 11.1%	0	0	0.0%	0	1	*
California State University									
Fresno	16	16	0.0%	1	0	-400.0%			
Long Beach	102	55	- 46.0%	8	10	+ 25.0%			
Los Angeles	34	22	- 35.2%	3	3	0.0%			
San Diego	35	24	- 31.4%	4	2	- 50.0%			
San Francisco	23	15	- 46.4%	0	0	0.0%			
San Jose	4	3	- 25.0%	4	16	+350.0%			

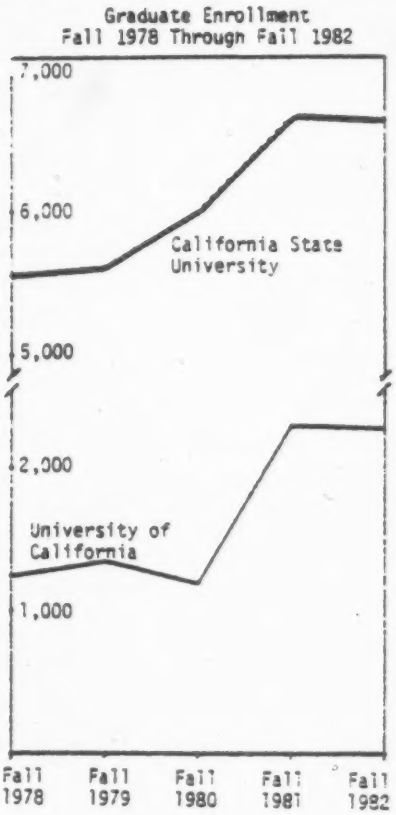
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 5 Business and Management: Business Management and Administratio

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	5	+ 25.0%
California State University	18	18	0.0%
GRADUATE ENROLLMENTS			
University of California	1,245	2,427	+ 94.9%
Percent Men	69.9%	62.0%	- 7.9%
Percent Minority	13.0%	17.7%	+ 4.7%
Percent Foreign	12.4%	12.4%	0.0%
California State University	5,558	6,639	+ 16.9%
Percent Men	71.1%	62.3%	- 8.8%
Percent Minority	22.5%	19.6%	- 2.9%
Percent Foreign	6.5%	6.8%	0.3%
GRADUATE DEGREES			
University of California			
Masters	770	936	+ 21.5%
Percent Men	72.9%	64.8%	- 8.6%
Percent Minority	12.8%	16.4%	+ 3.6%
Percent Foreign	10.0%	11.1%	+ 1.1%
Doctors	37	28	- 24.3%
Percent Men	88.6%	82.1%	- 6.5%
Percent Minority	0.0%	27.8%	+ 27.8%
Percent Foreign	30.3%	28.6%	- 1.7%
California State University			
Masters	1,025	1,222	+ 19.2%
Percent Men	77.9%	69.2%	- 8.7%
Percent Minority	12.6%	23.1%	+ 10.5%
Percent Foreign	6.4%	16.3%	+ 9.9%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	754	811	+ 7.5%	218	344	+ 57.8%	16	13	- 18.7%
Davis	0	62	+	0	0	0.0%	0	0	0.0%
Irvine	223	325	+ 45.7%	48	81	+ 68.7%	2	1	- 50.0%
Los Angeles	114	1,087	+853.5%	423	445	+ 5.2%	17	14	- 17.6%
Riverside	157	142	- 9.6%	56	66	+ 17.8%			
California State University									
Bakersfield	185	160	- 3.0%	13	12	- 7.6%			
Chico	53	98	+ 84.9%	15	7	- 53.3%			
Dominguez Hills	401	369	- 7.9%	148	92	- 37.8%			
Fresno	164	250	+ 52.4%	20	20	0.0%			
Fullerton	305	221	- 24.2%	77	66	- 14.2%			
Hayward	329	574	+ 74.4%	78	102	+ 30.7%			
Humboldt	63	46	- 26.9%	0	5				
Long Beach	623	656	+ 5.3%	125	109	- 12.8%			
Los Angeles	987	736	- 25.4%	72	81	+ 12.5%			
Northridge	161	226	+ 40.3%	52	42	- 19.2%			
Pomona	240	201	- 30.7%	31	103	+232.2%			
Sacramento	351	722	+105.9%	38	114	+200.0%			
San Bernardino	42	226	+438.1%	34	49	+ 44.1%			
San Diego	650	821	+ 26.3%	82	107	+ 30.4%			
San Francisco	701	814	+ 16.1%	97	191	+ 96.9%			
San Jose	212	170	- 19.8%	123	59	- 47.9%			
San Luis Obispo	21	64	+204.7%	17	20	+ 15.2%			
Stanislaus	90	145	+ 61.1%	23	46	+207.2%			

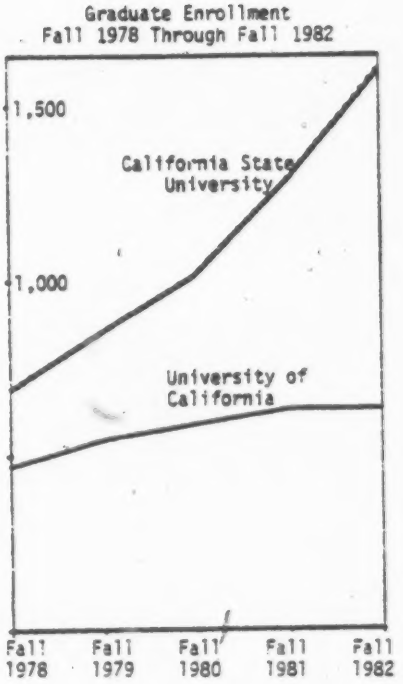
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 6 Computer and Information Sciences, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	8	13	+ 62.5%
GRADUATE ENROLLMENTS			
University of California	485	634	+ 30.7%
Percent Men	85.6%	80.4%	- 5.2%
Percent Minority	11.5%	21.7%	+ 10.2%
Percent Foreign	25.1%	25.4%	+ 0.3%
California State University	693	1,610	+132.3%
Percent Men	75.8%	66.7%	- 9.1%
Percent Minority	20.1%	33.5%	+ 13.4%
Percent Foreign	15.4%	16.5%	+ 1.1%
GRADUATE DEGREES			
University of California			
Masters	85	157	+ 84.7%
Percent Men	85.9%	84.1%	- 1.8%
Percent Minority	19.2%	17.8%	- 1.4%
Percent Foreign	29.9%	18.2%	- 11.7%
Doctors	22	28	+ 27.2%
Percent Men	100.0%	88.9%	- 11.1%
Percent Minority	20.0%	--	--
Percent Foreign	40.0%	52.6%	+ 12.6%
California State University			
Masters	70	155	+121.4%
Percent Men	77.1%	69.0%	- 8.1%
Percent Minority	16.7%	31.7%	+ 15.0%
Percent Foreign	13.2%	37.8%	+ 24.6%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees: Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	60	110	+ 83.3%	11	54	+390.9%	7	6	- 14.2%
Davis	53	93	+ 75.4%	9	14	+ 55.5%	0	0	0.0%
Irvine	70	83	+ 18.5%	4	14	+250.0%	1	3	+200.0%
Los Angeles	230	265	+ 15.2%	49	59	+ 20.4%	11	16	+ 45.4%
San Diego	58	57	- 1.7%	8	13	+ 62.5%	2	0	-100.0%
California State University									
Chico	59	126	+113.5%	8	17	+112.5%			
Dominguez Hills	0	140	*	0	0	0.0%			
Fullerton	145	295	+103.4%	13	34	+161.5%			
Hayward	0	107	*	0	0	0.0%			
Long Beach	1	23	+2200.0%	0	0	0.0%			
Northridge	113	183	+ 61.9%	0	12	*			
Pomona	11	15	+ 36.3%	0	0	0.0%			
Sacramento	30	154	+413.3%	0	15	*			
San Diego	85	128	+ 50.5%	4	2	- 50.0%			
San Francisco	2	100	+4900.0%	0	2	*			
San Jose	210	204	- 2.8%	37	59	+ 59.4%			
San Luis Obispo	37	64	+ 72.9%	6	14	+133.3%			
Sonoma	0	57	*	0	0	0.0%			

Source: California Postsecondary Education Commission.

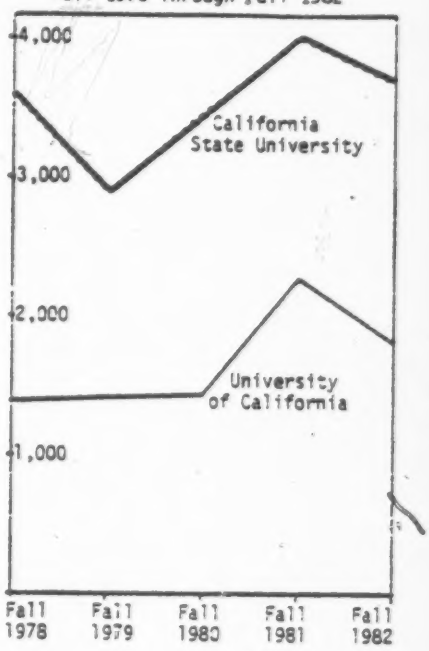
BEST COPY AVAILABLE

DISPLAY 7 Education, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	6	0.0%
California State University	19	19	0.0%
GRADUATE ENROLLMENTS			
University of California	1,388	1,807	+ 30.1%
Percent Men	40.6%	33.8%	- 6.8%
Percent Minority	21.7%	20.9%	- 0.8%
Percent Foreign	7.7%	6.4%	- 1.3%
California State University	3,592	3,682	+ 2.5%
Percent Men	29.7%	28.3%	- 1.4%
Percent Minority	26.5%	25.9%	- 0.6%
Percent Foreign	1.5%	2.1%	+ 0.6%
GRADUATE DEGREES			
University of California			
Masters	238	239	+ 0.4%
Percent Men	29.8%	25.5%	- 4.3%
Percent Minority	17.5%	18.5%	+ 1.0%
Percent Foreign	8.4%	11.6%	+ 3.2%
Doctors	105	140	+ 33.3%
Percent Men	46.7%	53.2%	+ 6.5%
Percent Minority	16.1%	20.9%	+ 4.8%
Percent Foreign	8.2%	12.0%	+ 3.8%
California State University			
Masters	2,840	2,302	- 11.9%
Percent Men	30.9%	25.8%	- 5.1%
Percent Minority	22.1%	20.9%	- 1.2%
Percent Foreign	2.7%	6.8%	+ 4.1%

Graduate Enrollment
Fall 1978 Through Fall 1982



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	452	385	- 14.8%	47	56	+ 19.1%	33	48	+ 45.4%
Davis	39	114	+192.3%	15	11	- 26.6%			
Irvine	165	36	- 78.0%	1	0	0.0%			
Los Angeles	574	671	+ 16.9%	84	59	- 29.7%	52	65	+ 25.0%
Riverside	95	224	+135.7%	22	29	+ 31.8%	7	7	0.0%
Santa Barbara	228	348	+ 52.6%	69	84	+ 21.7%	13	20	+ 53.8%
California State University									
Bakersfield	348	532	+ 52.8%	118	90	- 23.7%			
Chico	107	110	+ 2.8%	34	21	- 38.2%			
Dominguez Hills	142	161	+ 13.3%	67	42	- 37.3%			
Fresno	105	81	- 22.8%	36	32	- 11.1%			
Fullerton	0	0	0.0%	210	184	- 12.3%			
Hayward	272	227	- 16.5%	127	81	- 36.2%			
Humboldt	48	67	+ 39.5%	9	26	+188.8%			
Long Beach	10	27	+170.0%	164	109	- 33.5%			
Los Angeles	979	864	- 11.7%	374	329	- 12.0%			
Northridge	0	0	0.0%	375	269	- 28.2%			
Pomona	317	171	- 46.1%	65	75	+ 15.3%			
Sacramento	22	452	+195.4%	69	158	+128.9%			
San Bernardino	191	1	0.0%	153	166	+ 8.5%			
San Diego	819	618	- 24.5%	234	394	+ 68.3%			
San Francisco	0	0	0.0%	405	256	- 36.7%			
San Jose	0	0	0.0%	202	139	- 31.1%			
San Luis Obispo	421	334	- 21.1%	125	98	- 21.1%			
Sonoma	0	0	0.0%	43	41	- 4.6%			
Stanislaus	19	29	+ 52.6%	20	24	+ 20.0%			

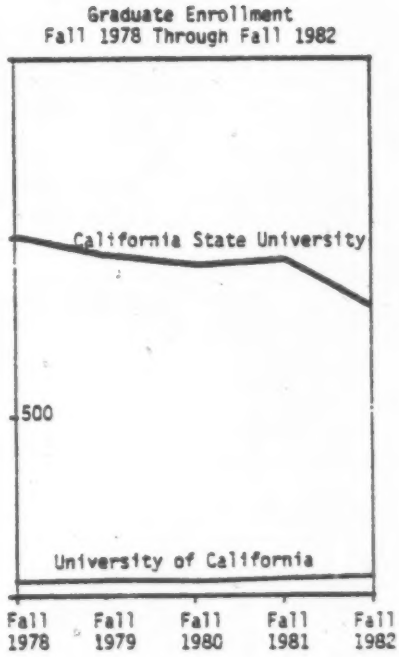
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 8 Education: Physical Education

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	3	3	0.0%
California State University	15	15	0.0%
GRADUATE ENROLLMENTS			
University of California	42	54	+ 28.5%
Percent Men	45.0%	50.9%	+ 5.9%
Percent Minority	9.1%	16.7%	+ 7.6%
Percent Foreign	7.4%	16.0%	+ 8.6%
California State University	1,006	807	- 19.7%
Percent Men	58.3%	57.1%	- 1.2%
Percent Minority	18.2%	16.2%	- 2.0%
Percent Foreign	3.2%	3.1%	- 0.1%
GRADUATE DEGREES			
University of California			
Masters	29	13	- 55.1%
Percent Men	62.1%	88.9%	+ 26.8%
Percent Minority	16.6%	20.0%	+ 3.4%
Percent Foreign	16.7%	33.3%	+ 16.6%
Doctors			
Percent Men			
Percent Minority			
Percent Foreign			
California State University			
Masters	156	133	- 14.7%
Percent Men	58.3%	57.1%	- 1.2%
Percent Minority	14.3%	25.4%	+ 11.1%
Percent Foreign	8.5%	19.7%	+ 11.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	14	27	+ 92.8%	6	4	- 33.3%			
Davis	17	26	+ 52.9%	4	6	+ 50.0%			
Santa Barbara	11	1	- 90.9%	7	3	- 57.1%			
California State University									
Chico	23	21	- 8.7%	8	14	+ 75.0%			
Fresno	58	37	- 36.2%	10	9	- 10.0%			
Fullerton	63	79	+ 25.4%	6	7	+ 16.6%			
Hayward	46	37	- 19.5%	4	11	+175.0%			
Humboldt	31	20	- 35.4%	3	3	0.0%			
Long Beach	171	111	- 35.0%	23	8	- 65.2%			
Los Angeles	122	71	- 41.8%	18	4	- 77.7%			
Northridge	100	71	- 29.0%	15	15	0.0%			
Pomona	32	46	+ 43.7%	6	15	+150.0%			
Sacramento	47	45	- 4.2%	5	5	0.0%			
San Diego	131	99	- 24.4%	26	17	- 34.6%			
San Francisco	64	42	- 34.3%	9	9	0.0%			
San Jose	72	59	- 18.0%	8	9	+ 12.5%			
San Luis Obispo	25	23	- 8.0%	13	5	- 61.5%			
Sonoma	12	22	+ 83.3%	2	2	0.0%			

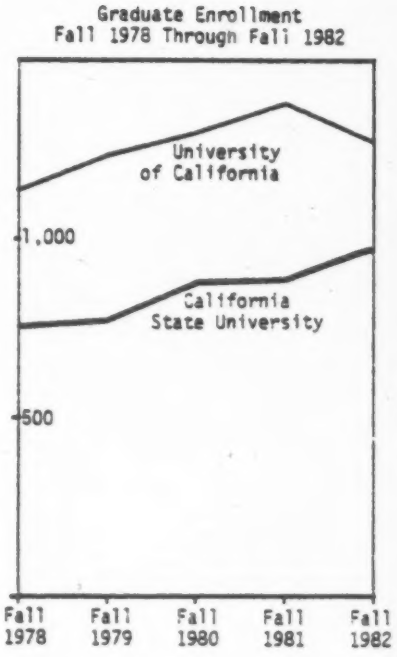
BEST COPY AVAILABLE

Source: California Postsecondary Education Commission.

DISPLAY 9 Engineering, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	3	- 25.0%
California State University	8	7	- 12.5%
GRADUATE ENROLLMENTS			
University of California	1,136	1,269	+ 11.7%
Percent Men	92.1%	89.2%	- 2.9%
Percent Minority	18.8%	27.5%	+ 8.7%
Percent Foreign	34.9%	32.2%	- 2.7%
California State University	755	976	+ 29.2%
Percent Men	89.3%	87.2%	- 2.1%
Percent Minority	30.9%	43.9%	+ 13.0%
Percent Foreign	18.2%	12.7%	- 5.5%
GRADUATE DEGREES			
University of California			
Masters	253	347	+ 37.1%
Percent Men	93.7%	87.6%	- 6.1%
Percent Minority	17.8%	25.3%	+ 7.5%
Percent Foreign	30.4%	32.8%	+ 2.4%
Doctors	74	93	+ 25.6%
Percent Men	98.6%	94.6%	- 4.0%
Percent Minority	23.5%	27.1%	+ 3.6%
Percent Foreign	28.4%	40.9%	+ 12.5%
California State University			
Masters	96	157	+ 63.5%
Percent Men	92.7%	98.1%	+ 5.4%
Percent Minority	27.1%	43.0%	+ 15.9%
Percent Foreign	21.0%	34.4%	+ 13.4%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	179	77	- 56.9%	0	52	0.0%	0	9	0.0%
Davis	294	460	+ 56.4%	76	105	+ 38.1%	21	19	- 9.5%
Irvine	77	0	-100.0%	12	31	+158.0%	3	7	+133.3%
Los Angeles	586	727	+ 24.0%	165	159	- 3.6%	50	58	+ 16.0%
California State University									
Fresno	[illegible]	12	+200.0%	5	6	+ 20.0%			
Fullerton	163	300	+ 84.0%	27	34	+ 25.9%			
Long Beach	49	36	- 26.5%	9	8	0.0%			
Los Angeles	70	129	+ 84.2%	0	0	0.0%			
Northridge	214	325	+ 51.8%	14	31	+121.4%			
Pomona	150	135	- 10.0%	36	68	+ 88.8%			
Sacramento	38	[illegible]	- 81.5%	1	3	+200.0%			
San Luis Obispo	29	17	- 41.3%	5	[illegible]	- 40.0%			

Source: California Postsecondary Education Commission.

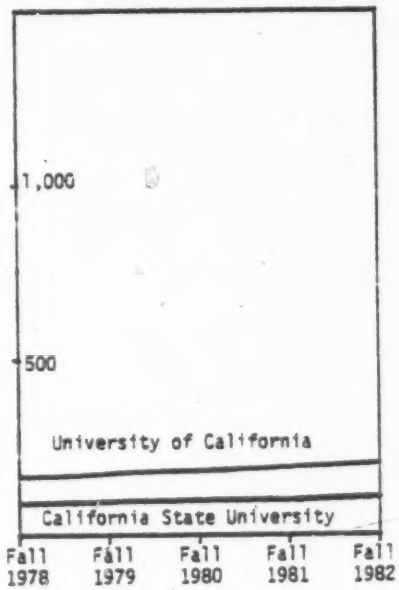
BEST COPY AVAILABLE

DISPLAY 10 Engineering: Chemical Engineering

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	3	3	0.0%
California State University	1	1	0.0%
GRADUATE ENROLLMENTS			
University of California	156	198	+ 26.9%
Percent Men	88.5%	86.9%	- 1.6%
Percent Minority	16.7%	14.9%	- 1.8%
Percent Foreign	21.8%	14.3%	- 7.5%
California State University	72	82	+ 13.8%
Percent Men	93.1%	78.0%	- 15.1%
Percent Minority	47.1%	43.6%	- 3.5%
Percent Foreign	22.2%	12.5%	- 9.7%
GRADUATE DEGREES			
University of California			
Masters	37	35	- 5.4%
Percent Men	94.6%	85.7%	- 8.9%
Percent Minority	--	24.1%	--
Percent Foreign	32.4%	11.4%	- 21.0%
Doctors	10	15	+ 50.0%
Percent Men	90.0%	86.7%	- 3.3%
Percent Minority	--	7.7%	--
Percent Foreign	37.5%	50.0%	+ 12.5%
California State University			
Masters	6	7	+ 16.6%
Percent Men	83.3%	85.7%	+ 2.4%
Percent Minority	100.0%	40.0%	- 60.0%
Percent Foreign	66.7%	14.3%	- 52.4%

Graduate Enrollment
Fall 1978 Through Fall 1982



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	127	164	+ 29.1%	30	29	- 3.3%	8	13	+ 62.5%
Davis	8	2	- 75.0%	0	0	0.0%	0	0	0.0%
Santa Barbara	21	32	+ 52.3%	7	6	- 14.2%	2	2	0.0%
California State University									
San Jose	36	38	+ 5.5%	6	7	+ 16.6%			

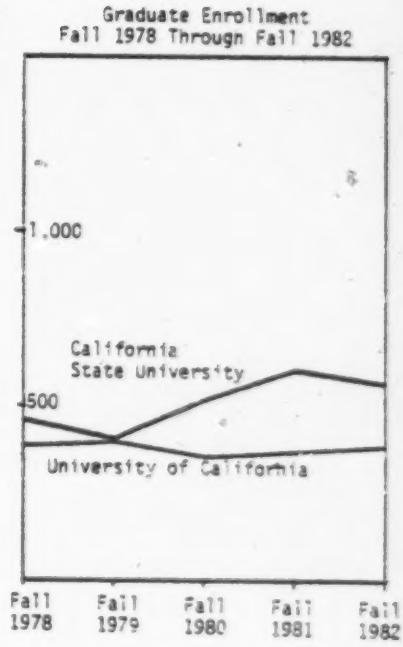
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 11 Engineering: Civil, Construction, and Transportation Engineering

SEGMENTAL INFORMATION

*Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	2	0.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	385	384	0.0%
Percent Men	92.0%	91.4%	- 0.8%
Percent Minority	16.3%	23.3%	+ 7.0%
Percent Foreign	43.6%	46.1%	+ 2.5%
California State University	459	564	+ 22.8%
Percent Men	91.9%	87.9%	- 4.0%
Percent Minority	34.1%	34.3%	+ 0.2%
Percent Foreign	18.1%	20.6%	+ 2.5%
GRADUATE DEGREES			
University of California			
Masters	189	187	- 1.0%
Percent Men	94.2%	89.8%	- 4.4%
Percent Minority	16.7%	25.5%	+ 8.8%
Percent Foreign	34.6%	48.1%	+ 13.5%
Doctors	35	43	+ 22.8%
Percent Men	100.0%	100.0%	0.0%
Percent Minority	71.1%	6.7%	- 0.4%
Percent Foreign	54.3%	64.3%	+ 10.0%
California State University			
Masters	92	112	+ 21.7%
Percent Men	97.8%	94.6%	- 3.2%
Percent Minority	42.6%	38.6%	- 4.0%
Percent Foreign	20.6%	43.8%	+ 23.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Fall 1982	Percent Change	Graduate Degrees Masters 1977-78	1981-82	Percent Change	Doctors 1977-78	1981-82	Percent Change
University of California									
Berkeley	364	341	- 6.3%	188	187	0.0%	35	43	+ 20.0%
Davis	21	0	-100.0%	0	0	0.0%	0	1	0.0%
Irvine	0	43	*	1	0	-100.0%	0	0	0.0%
California State University									
Long Beach	134	171	+ 27.6%	31	37	+ 19.3%			
Los Angeles	93	85	- 12.7%	30	57	+ 90.9%			
Sacramento	90	94	+ 36.6%	0	23	+100.0%			
San Diego	46	50	+ 4.1%	7	16	+128.5%			
San Jose	120	130	+ 18.1%	19	36	+ 89.5%			

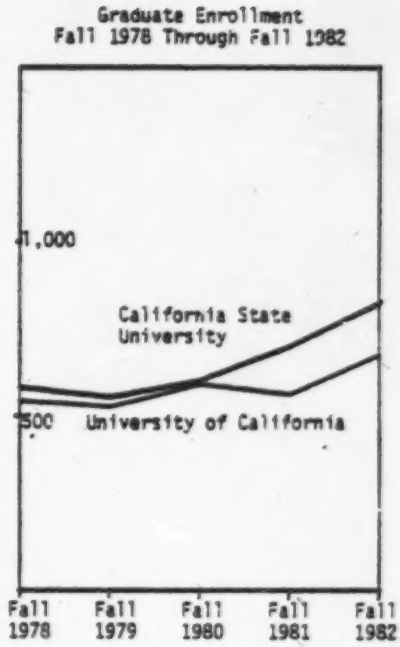
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 12 Engineering: Electrical, Electronics, and Communications Engineering

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	2	0.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	543	678	+ 24.8%
Percent Men	94.6%	90.6%	- 4.0%
Percent Minority	20.4%	30.6%	+ 10.2%
Percent Foreign	36.8%	37.6%	+ 0.8%
California State University	582	825	+ 41.7%
Percent Men	96.0%	90.2%	- 5.8%
Percent Minority	38.4%	46.4%	+ 8.0%
Percent Foreign	18.5%	18.8%	+ 0.3%
GRADUATE DEGREES			
University of California			
Masters	52	84	+ 61.5%
Percent Men	90.7%	92.1%	+ 1.4%
Percent Minority	21.6%	21.9%	+ 0.3%
Percent Foreign	35.8%	41.8%	+ 6.0%
Doctors	39	40	+ 2.5%
Percent Men	94.9%	92.5%	- 2.4%
Percent Minority	12.5%	50.0%	+ 37.5%
Percent Foreign	48.7%	57.5%	+ 8.8%
California State University			
Masters	110	90	- 18.1%
Percent Men	93.6%	95.6%	+ 2.0%
Percent Minority	20.7%	30.2%	+ 9.5%
Percent Foreign	33.3%	41.9%	+ 8.6%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	361	336	- 6.9%	99	105	+ 6.0%	32	27	- 15.6%
Santa Barbara	171	227	+ 32.7%	52	84	+ 61.5%	7	13	+ 85.7%
California State University									
Long Beach	187	283	+ 51.3%	14	22	+ 57.1%			
Los Angeles	65	51	- 21.5%	21	7	- 66.6%			
Sacramento	13	23	+ 76.9%	5	25	+400.0%			
San Diego	97	161	+ 65.9%	32	19	- 40.6%			
San Jose	163	195	+ 19.6%	38	17	- 55.2%			

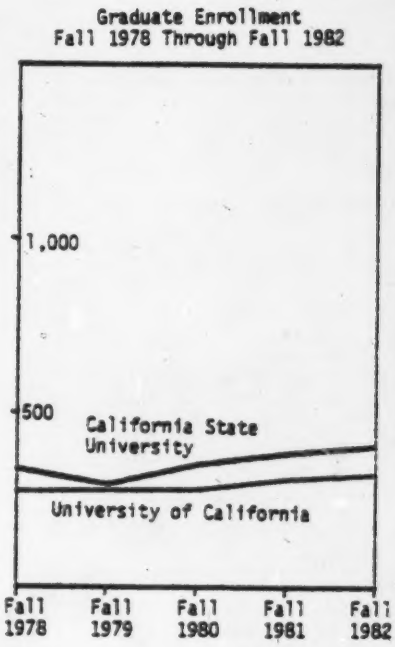
BEST COPY AVAILABLE

Source: California Postsecondary Education Commission.

DISPLAY 13 Engineering: Mechanical Engineering

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	3	+ 50.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	275	324	+ 17.8%
Percent Men	97.1%	91.4%	- 5.7%
Percent Minority	29.3%	20.5%	- 8.8%
Percent Foreign	44.7%	39.6%	- 5.1%
California State University	338	405	+ 19.8%
Percent Men	93.5%	90.6%	- 2.9%
Percent Minority	35.0%	43.5%	+ 8.5%
Percent Foreign	19.0%	23.0%	+ 4.0%
GRADUATE DEGREES			
University of California			
Masters	112	132	+ 17.8%
Percent Men	95.5%	88.6%	- 6.9%
Percent Minority	23.2%	26.6%	+ 3.4%
Percent Foreign	38.4%	31.8%	- 6.6%
Doctors	29	23	- 20.6%
Percent Men	100.0%	95.6%	- 4.4%
Percent Minority	14.3%	25.0%	+ 10.7%
Percent Foreign	50.0%	52.2%	+ 2.2%
California State University			
Masters	51	52	+ 1.9%
Percent Men	98.0%	94.2%	- 3.8%
Percent Minority	63.6%	54.6%	- 9.0%
Percent Foreign	27.3%	48.1%	+ 20.8%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees: Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	229	248	+ 8.3%	95	117	+ 23.1%	27	19	- 29.6%
Irvine	0	28	*	0	0	0.0%	0	0	0.0%
Santa Barbara	32	47	+ 46.8%	7	15	+114.2%	1	4	+300.0%
California State University									
Long Beach	110	160	+ 45.4%	8	15	+ 87.5%			
Los Angeles	48	42	- 12.5%	18	8	- 55.5%			
Sacramento	29	51	+ 75.8%	3	9	+200.0%			
San Diego	46	71	+ 54.3%	7	11	+ 57.1%			
San Jose	82	49	- 40.9%	15	9	- 40.0%			

Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

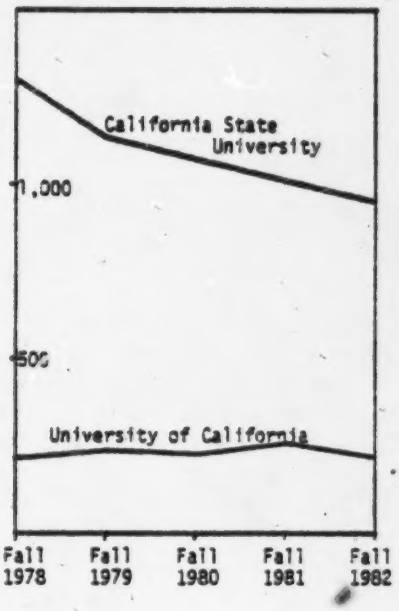
BEST COPY AVAILABLE

DISPLAY 14 Fine and Applied Arts: Art (Painting, Drawing, and Sculpture)

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	11	11	0.0%
GRADUATE ENROLLMENTS			
University of California	215	217	+ 0.9%
Percent Men	47.9%	43.3%	- 4.6%
Percent Minority	13.7%	17.6%	+ 3.9%
Percent Foreign	5.1%	9.5%	+ 4.4%
California State University	1,300	950	- 26.9%
Percent Men	36.8%	33.3%	- 3.5%
Percent Minority	18.1%	19.6%	+ 1.5%
Percent Foreign	3.2%	5.2%	+ 2.0%
GRADUATE DEGREES			
University of California			
Masters	102	104	+ 1.9%
Percent Men	38.2%	42.3%	+ 3.9%
Percent Minority	17.1%	16.1%	- 1.0%
Percent Foreign	16.7%	8.6%	- 8.1%
Doctors			
Percent Men			
Percent Minority			
Percent Foreign			
California State University			
Masters	264	239	- 9.4%
Percent Men	47.3%	38.9%	- 8.4%
Percent Minority	11.0%	17.6%	+ 6.6%
Percent Foreign	7.9%	9.4%	+ 1.5%

Graduate Enrollment
Fall 1978 Through Fall 1982



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	56	54	- 3.5%	27	44	+ 62.9%			
Davis	15	15	0.0%	11	9	- 18.1%			
Irvine	20	26	+ 30.0%	10	14	+ 40.0%			
Los Angeles	87	84	- 3.4%	44	22	- 50.0%			
Santa Barbara	37	27	- 27.0%	10	15	+ 50.0%			
California State University									
Chico	32	19	- 40.6%	6	7	+ 16.6%			
Fresno	63	54	- 14.2%	12	7	- 41.6%			
Fullerton	108	96	- 11.1%	36	27	- 25.0%			
Humboldt	40	32	- 20.0%	6	3	- 50.0%			
Long Beach	202	126	- 37.6%	52	36	- 30.7%			
Los Angeles	160	106	- 33.7%	31	33	+ 6.4%			
Northridge	212	136	- 35.8%	25	27	+ 8.0%			
Sacramento	109	57	- 47.7%	14	30	+114.2%			
San Diego	103	73	- 29.1%	19	18	- 5.2%			
San Francisco	87	73	- 16.0%	24	25	+ 4.1%			
San Jose	126	140	- 11.1%	39	26	- 33.3%			

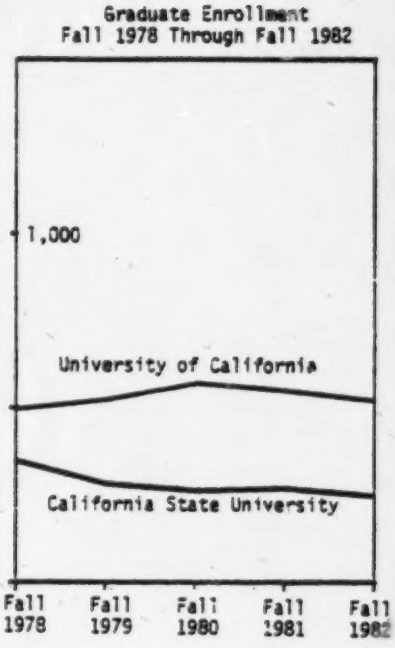
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 15 Fine and Applied Arts: Dramatic Arts

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	9	9	0.0%
GRADUATE ENROLLMENTS			
University of California	497	522	+ 5.0%
Percent Men	56.2%	53.7%	- 2.5%
Percent Minority	12.1%	17.4%	+ 5.3%
Percent Foreign	12.1%	12.0%	- 0.1%
California State University	348	247	- 29.0%
Percent Men	44.9%	42.0%	- 2.9%
Percent Minority	12.8%	19.2%	+ 6.4%
Percent Foreign	4.8%	6.7%	+ 1.9%
GRADUATE DEGREES			
University of California			
Masters	117	117	0.0%
Percent Men	61.5%	50.4%	- 11.1%
Percent Minority	15.3%	25.4%	+ 10.1%
Percent Foreign	12.4%	12.1%	- 0.3%
Doctors	4	10	+150.0%
Percent Men	75.0%	40.0%	- 35.0%
Percent Minority	0.0%	50.0%	+ 50.0%
Percent Foreign	0.0%	0.0%	0.0%
California State University			
Masters	53	68	+ 28.3%
Percent Men	59.6%	42.2%	- 17.4%
Percent Minority	37.5%	25.0%	- 12.5%
Percent Foreign	0.0%	30.0%	+ 30.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	27	36	+ 33.3%	5	3	- 40.0%	2	5	+150.0%
Davis	31	38	+ 22.5%	12	14	+ 16.6%	0	0	0.0%
Irvine	33	48	+ 45.4%	14	3	- 78.5%	0	0	0.0%
Los Angeles	441	368	- 16.5%	65	88	+ 35.3%	0	2	*
Santa Barbara	25	26	+ 4.0%	5	9	+ 80.0%	2	3	0.0%
California State University									
Fullerton	35	42	+ 20.0%	7	9	+ 28.5%			
Humboldt	39	24	- 38.4%	6	9	+ 50.0%			
Long Beach	38	25	- 34.2%	3	5	+ 66.6%			
Los Angeles	37	22	- 40.5%	10	14	+ 40.0%			
Northridge	21	29	+ 38.1%	4	5	+ 25.0%			
Sacramento	20	13	- 35.0%	1	7	+600.0%			
San Diego	33	27	- 18.1%	3	-	+133.3%			
San Francisco	55	31	- 43.6%	9	8	- 11.1%			
San Jose	36	19	- 47.2%	9	4	- 55.5%			

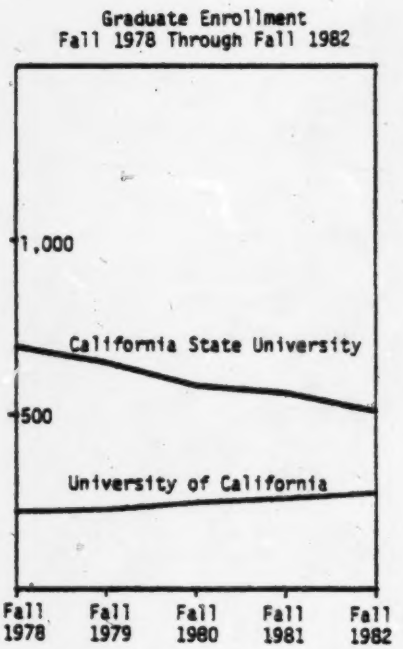
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 16 Fine and Applied Arts: Music (Liberal Arts Programs)

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	11	11	0.0%
GRADUATE ENROLLMENTS			
University of California	237	277	+ 16.8%
Percent Men	66.8%	58.1%	- 8.7%
Percent Minority	10.7%	17.4%	+ 6.7%
Percent Foreign	9.7%	12.7%	+ 3.0%
California State University	695	510	- 26.6%
Percent Men	47.2%	46.4%	- 0.8%
Percent Minority	14.7%	22.0%	+ 7.3%
Percent Foreign	1.9%	4.8%	+ 2.9%
GRADUATE DEGREES			
University of California			
Masters	53	53	0.0%
Percent Men	62.3%	62.3%	0.0%
Percent Minority	0.0%	29.4%	+ 29.4%
Percent Foreign	11.1%	11.6%	+ 0.5%
Doctors	21	16	- 23.8%
Percent Men	52.4%	62.5%	+ 10.1%
Percent Minority	20.0%	0.0%	- 20.0%
Percent Foreign	13.3%	22.2%	+ 8.9%
California State University			
Masters	132	108	- 18.1%
Percent Men	53.0%	49.0%	- 4.0%
Percent Minority	13.2%	24.4%	+ 11.2%
Percent Foreign	7.7%	19.4%	+ 11.7%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees: Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	41	35	- 14.6%	6	12	+100.0%	9	5	- 44.4%
Davis	2	5	+150.0%	3	1	- 66.6%	0	0	0.0%
Irvine	6	15	+150.0%	0	4	*	0	0	0.0%
Los Angeles	97	99	+ 2.0%	12	12	0.0%	6	4	- 33.3%
Riverside	14	14	0.0%	6	5	- 16.6%	0	0	0.0%
San Diego	45	67	+ 48.8%	15	7	- 53.3%	4	5	+ 25.0%
California State University									
Chico	17	17	0.0%	6	4	- 33.3%			
Fresno	32	33	+ 3.1%	7	10	+ 42.8%			
Fullerton	45	19	- 57.7%	10	4	- 60.0%			
Hayward	50	37	- 26.0%	9	8	- 11.1%			
Long Beach	77	63	- 18.1%	12	4	- 66.6%			
Los Angeles	116	93	- 19.8%	21	16	- 23.8%			
Northridge	118	80	- 32.2%	20	19	- 5.0%			
Sacramento	45	23	- 48.8%	2	7	+250.0%			
San Diego	33	35	+ 6.0%	10	9	- 10.0%			
San Francisco	76	35	- 53.9%	18	11	- 38.8%			
San Jose	47	44	- 6.3%	17	16	- 5.8%			

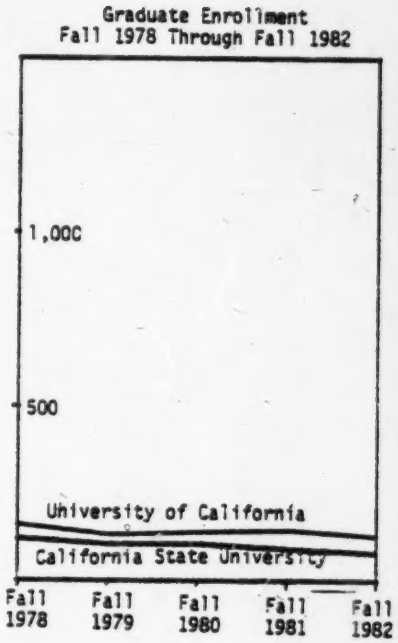
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 17 Foreign Languages: French

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	7	7	0.0%
California State University	8	8	0.0%
GRADUATE ENROLLMENTS			
University of California	160	127	- 20.6%
Percent Men	25.8%	24.1%	- 1.7%
Percent Minority	12.2%	12.9%	+ 0.7%
Percent Foreign	21.1%	19.8%	- 1.3%
California State University	120	79	- 34.1%
Percent Men	20.2%	35.0%	- 14.8%
Percent Minority	12.9%	31.3%	+ 18.4%
Percent Foreign	8.8%	21.1%	+ 12.3%
GRADUATE DEGREES			
University of California			
Masters	25	30	+ 20.0%
Percent Men	26.1%	45.8%	19.7%
Percent Minority	0.0%	20.0%	+ 20.0%
Percent Foreign	16.7%	25.0%	+ 8.3%
Doctors	9	10	+ 11.1%
Percent Men	25.0%	37.5%	+ 12.5%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	20.0%	+ 20.0%
California State University			
Masters	23	28	+ 21.7%
Percent Men	25.0%	27.8%	+ 2.8%
Percent Minority	44.4%	0.0%	- 44.4%
Percent Foreign	42.9%	43.8%	+ 0.9%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	33	24	- 27.2%	7	6	- 14.2%	6	2	- 66.6%
Davis	16	16	0.0%	2	2	0.0%	0	0	0.0%
Irvine	22	17	- 22.7%	0	2	*	0	1	0.0%
Los Angeles	58	48	- 17.2%	11	2	- 81.5%	2	5	+150.0%
Riverside	4	1	- 75.0%	0	2	*	1	1	0.0%
San Diego	10	9	- 10.0%	0	2	*	0	1	*
Santa Barbara	17	12	- 29.4%	5	14	+180.0%	0	0	0.0%
California State University									
Fullerton	9	[illegible]	- 22.2%	2	4	+100.0%			
Long Beach	15	14	- 6.6%	1	3	+200.0%			
Los Angeles	9	8	- 11.1%	[illegible]	[illegible]	- 50.0%			
Northridge	13	8	- 38.4%	4	1	- 75.0%			
Sacramento	10	5	- 50.0%	4	0	-100.0%			
San Diego	15	11	- 26.0%	0	*	*			
San Francisco	21	10	- 52.3%	5	4	- 20.0%			
San Jose	10	9	- 10.0%	0	5	*			

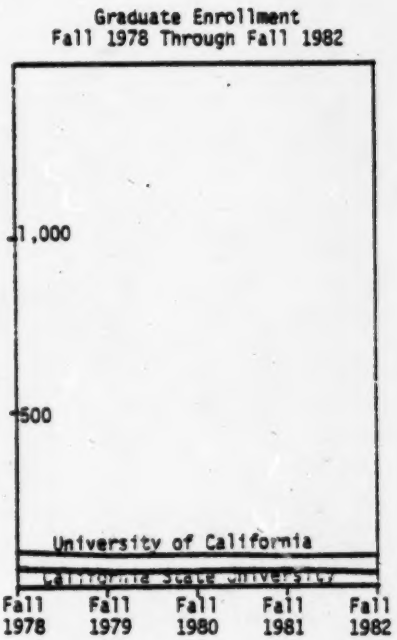
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 18 Foreign Languages: German

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	6	0.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	101	88	- 12.8%
Percent Men	33.3%	49.4%	+ 16.1%
Percent Minority	9.4%	4.2%	- 5.2%
Percent Foreign	16.2%	26.2%	+ 10.0%
California State University	53	38	- 28.3%
Percent Men	40.0%	37.8%	- 2.2%
Percent Minority	50.0%	18.2%	- 31.8%
Percent Foreign	8.3%	13.3%	+ 5.0%
GRADUATE DEGREES			
University of California			
Masters	18	12	- 33.3%
Percent Men	35.7%	50.0%	14.3%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	36.4%	25.0%	- 11.4%
Doctors	10	4	- 60.0%
Percent Men	60.0%	50.0%	- 10.0%
Percent Minority	0.0%	100.0%	+100.0%
Percent Foreign	100.0%	0.0%	-100.0%
California State University			
Masters	10	11	+ 10.0%
Percent Men	50.0%	28.6%	- 21.4%
Percent Minority	0.0%	33.3%	+ 33.3%
Percent Foreign	33.3%	44.4%	+ 11.1%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	10	7	- 30.0%	6	6	0.0%	4	1	- 75.0%
Davis	14	12	- 14.2%	3	1	- 66.6%	0	1	*
Irvine	14	12	- 14.2%	1	2	+100.0%	1	0	-100.0%
Los Angeles	15	18	+ 20.0%	3	1	- 66.6%	4	0	-100.0%
Riverside	5	2	- 60.0%	0	1	*	0	0	0.0%
San Diego	14	11	- 21.4%	2	1	-100.0%	0	2	*
California State University									
Fullerton	11	7	- 36.3%	5	2	- 60.0%			
Long Beach	8	6	- 25.0%	0	0	0.0%			
Sacramento	-	8	+ 12.5%	3	4	+ 33.3%			
San Diego	5	4	- 20.0%	2	2	0.0%			
San Francisco	12	8	- 33.3%	0	3	*			

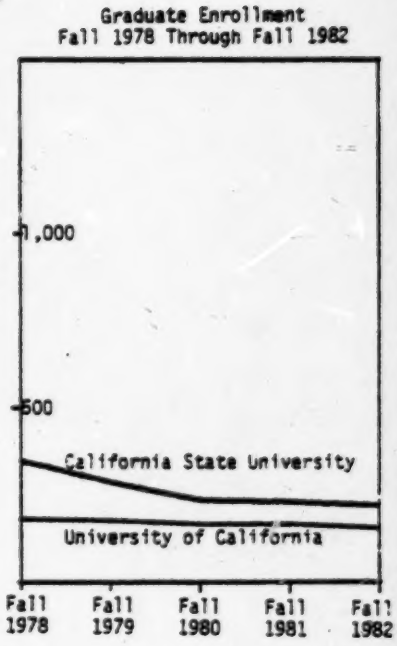
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 19 Foreign Languages: Spanish

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	7	7	0.0%
California State University	9	9	0.0%
GRADUATE ENROLLMENTS			
University of California	180	155	- 13.8%
Percent Men	35.9%	30.1%	- 5.8%
Percent Minority	54.5%	63.1%	+ 8.6%
Percent Foreign	20.3%	9.9%	- 10.4%
California State University	348	219	- 37.0%
Percent Men	32.5%	34.1%	+ 1.6%
Percent Minority	57.8%	58.0%	+ 0.2%
Percent Foreign	4.7%	5.8%	+ 1.1%
GRADUATE DEGREES			
University of California			
Masters	46	32	- 30.4%
Percent Men	37.5%	34.4%	- 3.1%
Percent Minority	44.4%	42.9%	- 1.5%
Percent Foreign	37.5%	14.3%	- 23.2%
Doctors	0	7	0.0%
Percent Men	0.0%	33.3%	0.0%
Percent Minority	0.0%	80.0%	+ 80.0%
Percent Foreign	0.0%	16.7%	+ 16.7%
California State University			
Masters	48	41	- 14.5%
Percent Men	27.1%	40.5%	+ 13.4%
Percent Minority	55.6%	53.6%	- 2.0%
Percent Foreign	16.7%	30.4%	+ 13.7%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	34	13	- 61.7%	6	4	- 33.3%	0	0	0.0%
Davis	19	23	+ 21.0%	5	7	+ 40.0%	0	1	*
Irvine	33	42	+ 27.2%	10	3	- 70.0%	0	6	*
Los Angeles	29	21	- 27.5%	11	7	+ 36.4%	0	0	0.0%
Riverside	11	16	+ 45.4%	4	1	- 75.0%	0	0	0.0%
San Diego	31	25	- 19.3%	4	6	+ 50.0%	0	0	0.0%
California State University									
Fresno	24	7	- 70.8%	6	0	-100.0%			
Fullerton	25	16	- 36.0%	3	*	+133.3%			
Long Beach	41	12	- 70.7%	0	3	*			
Los Angeles	64	57	- 10.9%	10	4	- 60.0%			
Northridge	30	22	- 26.6%	3	1	- 66.6%			
Sacramento	31	28	- 9.6%	4	3	- 25.0%			
San Diego	43	25	- 41.8%	13	11	- 15.4%			
San Francisco	33	14	- 57.5%	6	7	+ 16.7%			
San Jose	26	19	- 26.9%	3	5	+ 66.6%			

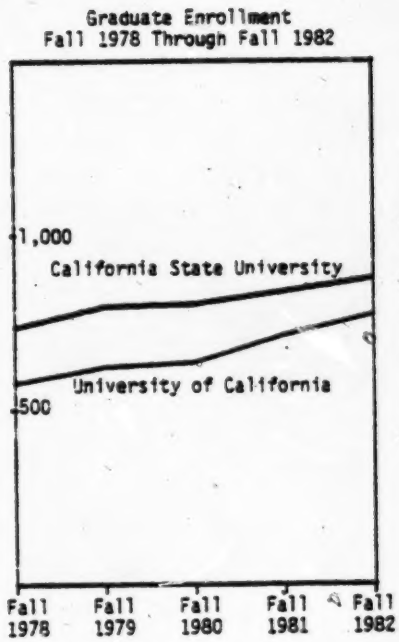
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 20 Health Professions: Nursing

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	2	0.0%
California State University	6	6	0.0%
GRADUATE ENROLLMENTS			
University of California	579	776	+ 34.0%
Percent Men	3.2%	2.8%	- 0.4%
Percent Minority	9.6%	12.5%	+ 2.9%
Percent Foreign	2.6%	4.7%	+ 2.1%
California State University	737	877	+ 19.0%
Percent Men	10.3%	10.4%	+ 0.1%
Percent Minority	14.1%	20.1%	+ 7.0%
Percent Foreign	1.2%	0.9%	- 0.3%
GRADUATE DEGREES			
University of California			
Masters	252	224	- 11.1%
Percent Men	4.4%	1.6%	- 2.8%
Percent Minority	11.3%	13.2%	+ 1.9%
Percent Foreign	1.3%	2.7%	+ 1.4%
Doctors	4	6	0.0%
Percent Men	0.0%	0.0%	0.0%
Percent Minority	0.0%	16.7%	+ 16.7%
Percent Foreign	25.0%	0.0%	- 25.0%
California State University			
Masters	70	99	+ 41.4%
Percent Men	9.1%	11.8%	+ 2.7%
Percent Minority	18.0%	9.1%	- 8.9%
Percent Foreign	0.0%	5.0%	+ 5.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Los Angeles	216	261	+ 20.8%	78	97	+ 24.3%	0	0	0.0%
San Francisco	341	498	+ 46.0%	150	127	- 15.3%	4	6	+ 50.0%
California State University									
Chico	41	23	- 43.9%	2	6	+200.0%			
Fresno	81	133	+ 64.2%	9	7	- 22.2%			
Long Beach	166	255	+ 53.6%	11	41	+272.7%			
Los Angeles	246	171	- 30.4%	35	25	- 28.5%			
San Diego	7	23	- 0.0%	0	0	0.0%			
San Jose	73	129	+ 76.7%	13	20	+ 53.8%			

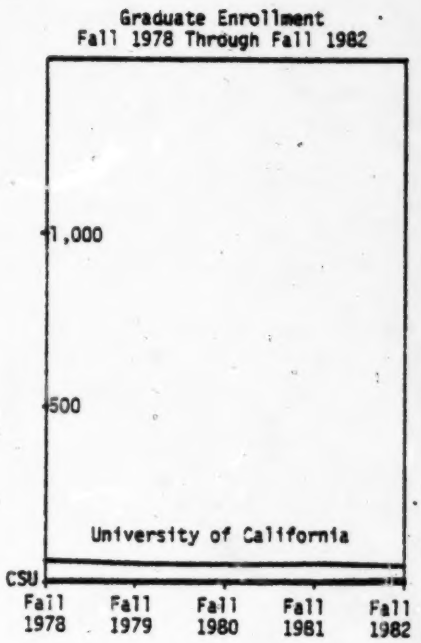
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 21 Letters: Classics

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	0	1	0.0%
GRADUATE ENROLLMENTS			
University of California	61	47	- 22.9%
Percent Men	61.7%	71.1%	+ 9.4%
Percent Minority	10.0%	16.7%	+ 6.7%
Percent Foreign	12.8%	8.0%	- 4.8%
California State University	0	7	*
Percent Men	0.0%	0.0%	0.0%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	0.0%	0.0%
GRADUATE DEGREES			
University of California			
Masters	11	14	+ 27.2%
Percent Men	81.8%	53.8%	- 28.0%
Percent Minority	0.0%	33.3%	+ 33.3%
Percent Foreign	0.0%	0.0%	0.0%
Doctors	2	2	0.0%
Percent Men	0.0%	0.0%	0.0%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	100.0%	+100.0%
California State University			
Masters	0	0	0.0%
Percent Men	0.0%	0.0%	0.0%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	0.0%	0.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	22	17	- 22.7%	0	1	*	1	1	0.0%
Irvine	5	6	+ 20.0%	2	0	-100.0%	0	0	0.0%
Los Angeles	19	13	- 31.6%	2	0	-100.0%	1	1	0.0%
Santa Barbara	15	11	- 26.7%	7	13	+ 85.7%	0	0	0.0%
California State University									
San Francisco	0	-	*	0	0	0.0%			

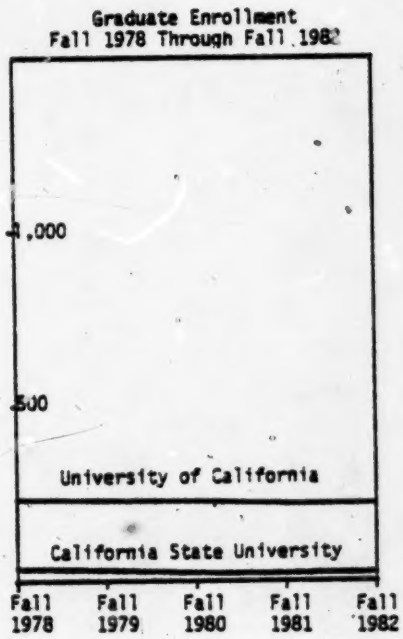
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 22 Letters: Comparative Literature

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	7	+ 16.7%
California State University	2	2	0.0%
GRADUATE ENROLLMENTS			
University of California	234	222	- 5.1%
Percent Men	36.3%	34.7%	- 1.6%
Percent Minority	11.7%	14.9%	+ 3.2%
Percent Foreign	13.4%	12.3%	- 1.1%
California State University	36	25	- 30.5%
Percent Men	33.3%	32.0%	- 1.3%
Percent Minority	9.5%	27.3%	+ 17.8%
Percent Foreign	16.7%	27.3%	+ 10.6%
GRADUATE DEGREES			
University of California			
Masters	32	23	- 28.1%
Percent Men	35.7%	44.4%	+ 8.7%
Percent Minority	28.6%	27.3%	- 1.3%
Percent Foreign	26.9%	30.0%	+ 3.1%
Doctors	14	15	+ 7.1%
Percent Men	63.6%	33.3%	- 30.3%
Percent Minority	33.3%	100.0%	+ 66.7%
Percent Foreign	20.0%	0.0%	- 20.0%
California State University			
Masters	7	7	0.0%
Percent Men	0.0%	0.0%	0.0%
Percent Minority	33.3%	20.0%	- 13.3%
Percent Foreign	16.7%	0.0%	- 16.7%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	120	106	- 11.6%	14	9	- 35.7%	6	7	+ 16.7%
Davis	0	11	*	0	0	0.0%	0	0	0.0%
Irvine	21	18	- 14.2%	0	1	*	0	2	*
Los Angeles	40	38	- 5.0%	5	5	0.0%	2	3	+ 50.0%
Riverside	25	25	0.0%	6	4	- 33.3%	0	1	*
San Diego	23	19	- 17.3%	3	3	0.0%	1	2	+100.0%
Santa Barbara	5	5	0.0%	3	1	- 66.7%	0	0	0.0%
California State University									
Fullerton	-	7	0.0%	1	0	-100.0%			
San Francisco	24	15	- 37.5%	6	7	+ 16.7%			

Source: California Postsecondary Education Commission.

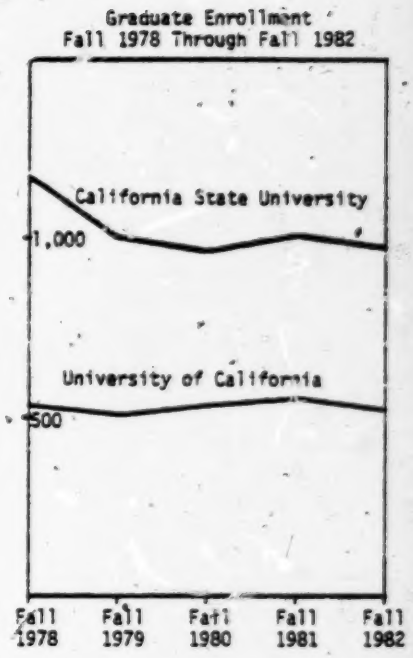
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 23 Letters: English

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	6	0.0%
California State University	19	19	0.0%
GRADUATE ENROLLMENTS			
University of California	532	520	- 2.2%
Percent Men	43.8%	37.3%	- 6.5%
Percent Minority	5.4%	7.2%	+ 1.8%
Percent Foreign	7.1%	5.7%	- 1.4%
California State University	1,169	974	- 16.6%
Percent Men	34.5%	33.9%	- 0.4%
Percent Minority	13.7%	13.9%	+ 0.2%
Percent Foreign	3.0%	6.1%	+ 3.1%
GRADUATE DEGREES			
University of California			
Masters	99	89	- 10.1%
Percent Men	42.4%	28.1%	- 14.3%
Percent Minority	7.7%	3.6%	- 4.1%
Percent Foreign	6.6%	9.1%	+ 2.5%
Doctors	56	36	- 35.7%
Percent Men	53.6%	48.4%	- 5.2%
Percent Minority	0.0%	20.0%	+ 20.0%
Percent Foreign	3.4%	0.0%	- 3.4%
California State University			
Masters	342	300	- 12.2%
Percent Men	39.7%	31.6%	- 8.1%
Percent Minority	9.6%	14.5%	+ 4.9%
Percent Foreign	6.6%	13.6%	+ 7.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	165	169	+ 2.4%	27	32	+ 18.5%	29	14	- 51.7%
Davis	87	72	- 17.2%	13	13	0.0%	4	5	+ 25.0%
Irvine	48	55	+ 14.5%	5	7	+ 40.0%	4	5	+ 25.0%
Los Angeles	135	123	- 8.8%	34	25	- 26.4%	13	7	- 46.2%
Riverside	48	58	+ 20.8%	10	1	- 90.0%	0	1	*
Santa Barbara	49	43	- 12.2%	10	11	+ 10.0%	6	4	- 33.3%
California State University									
Bakersfield	35	22	- 37.1%	3	1	- 66.6%			
Chico	99	37	- 5.1%	9	6	- 33.3%			
Dominguez Hills	43	50	+ 16.2%	11	12	+ 9.0%			
Fresno	54	48	- 11.1%	10	8	- 20.0%			
Fullerton	94	84	- 10.6%	29	20	- 31.0%			
Hayward	30	27	- 10.0%	17	5	- 70.6%			
Humboldt	33	41	+ 24.2%	6	5	- 16.6%			
Long Beach	92	61	- 33.7%	17	6	- 64.7%			
Los Angeles	139	91	- 34.5%	31	9	- 70.9%			
Northridge	109	95	- 12.8%	9	12	+ 33.3%			
Pomona	19	16	- 15.7%	7	10	+ 42.9%			
Sacramento	115	98	- 14.7%	14	26	+ 85.7%			
San Bernardino	2	35	+1650.0%	0	2	*			
San Diego	136	108	- 20.5%	13	19	- 46.2%			
San Francisco	63	36	- 42.8%	128	118	- 7.8%			
San Jose	64	62	- 3.1%	17	14	- 17.6%			
San Luis Obispo	22	21	- 4.5%	2	8	+300.0%			
Sonoma	67	34	- 49.2%	15	11	- 26.7%			
Stanislaus	13	8	- 38.4%	4	8	+100.0%			

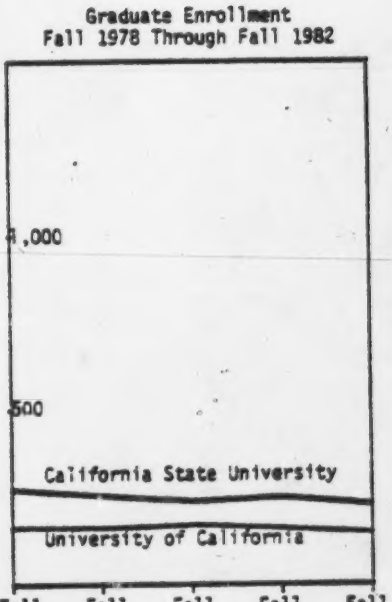
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 24 Letters: Linguistics

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	4	0.0%
California State University	6	6	0.0%
GRADUATE ENROLLMENTS			
University of California	163	148	- 9.2%
Percent Men	47.2%	44.6%	- 2.6%
Percent Minority	11.1%	16.1%	+ 5.0%
Percent Foreign	22.7%	24.6%	- 1.9%
California State University	273	228	- 16.4%
Percent Men	30.4%	27.2%	- 3.2%
Percent Minority	18.9%	23.4%	+ 4.5%
Percent Foreign	14.3%	18.4%	+ 4.1%
GRADUATE DEGREES			
University of California			
Masters	24	27	+ 12.5%
Percent Men	37.5%	33.3%	- 4.2%
Percent Minority	22.2%	25.0%	+ 2.8%
Percent Foreign	40.9%	28.6%	- 12.3%
Doctors	11	20	+ 81.8%
Percent Men	90.9%	60.0%	- 30.9%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	37.5%	16.7%	- 20.8%
California State University			
Masters	60	45	- 25.0%
Percent Men	30.0%	28.6%	- 1.4%
Percent Minority	15.4%	15.4%	0.0%
Percent Foreign	20.0%	26.2%	+ 6.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	50	50	0.0%	8	13	+ 62.5%	3	6	+100.0%
Davis	7	10	+ 42.8%	5	2	- 60.0%	0	0	0.0%
Los Angeles	58	49	- 15.5%	9	6	- 33.3%	4	6	+ 50.0%
San Diego	48	39	- 18.7%	2	6	+200.0%	-	8	+100.0%
California State University									
Fresno	52	47	- 9.6%	9	7	- 22.2%			
Fullerton	31	29	- 6.4%	8	8	0.0%			
Long Beach	48	46	- 4.1%	16	9	- 43.7%			
Northridge	32	31	- 3.1%	7	3	- 57.1%			
San Diego	46	39	- 15.2%	6	8	+ 33.3%			
San Jose	64	36	- 43.7%	14	10	- 28.6%			

Source: California Postsecondary Education Commission.

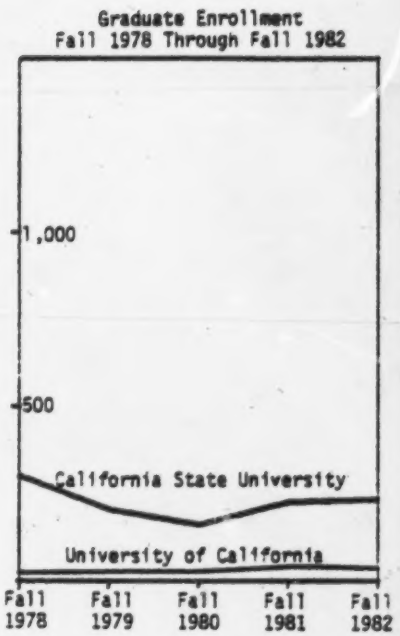
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 25 Letters: Speech, Debate, and Forensic Science

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	2	0.0%
California State University	10	10	0.0%
GRADUATE ENROLLMENTS			
University of California	24	37	+ 54.1%
Percent Men	50.0%	51.3%	+ 1.3%
Percent Minority	20.8%	6.9%	- 13.1%
Percent Foreign	13.6%	9.1%	- 4.5%
California State University	301	233	- 22.5%
Percent Men	39.9%	36.5%	- 3.4%
Percent Minority	20.4%	12.8%	- 7.7%
Percent Foreign	8.3%	7.4%	- 0.9%
GRADUATE DEGREES			
University of California			
Masters	8	5	- 37.5%
Percent Men	75.0%	80.0%	+ 5.0%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	25.0%	+ 25.0%
Doctors	2	2	0.0%
Percent Men	100.0%	100.0%	0.0%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	0.0%	0.0%	0.0%
California State University			
Masters	91	55	- 39.5%
Percent Men	44.2%	42.0%	- 2.2%
Percent Minority	21.4%	29.4%	+ 5.0%
Percent Foreign	5.6%	16.7%	+ 11.1%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	20	26	+ 30.0%	8	4	- 50.0%	1	2	+100.0%
Davis	3	11	+266.6%	0	1	*			
California State University									
Fresno	13	11	- 15.4%	11	2	- 81.8%			
Fullerton	39	10	- 74.3%	21	2	- 90.4%			
Hayward	6	7	+ 16.7%	8	1	- 87.5%			
Humboldt	8	3	- 62.5%	2	3	+ 50.0%			
Long Beach	32	28	- 12.5%	4	7	+ 75.0%			
Los Angeles	29	15	- 48.2%	9	7	- 22.2%			
Northridge	15	21	+ 40.0%	3	5	+ 66.7%			
Sacramento	60	71	+ 18.3%	4	8	+100.0%			
San Diego	18	24	+ 33.3%	6	6	0.0%			
San Francisco	54	30	- 44.4%	15	9	- 40.0%			
San Jose	27	13	- 51.8%	3	5	+ 66.6%			

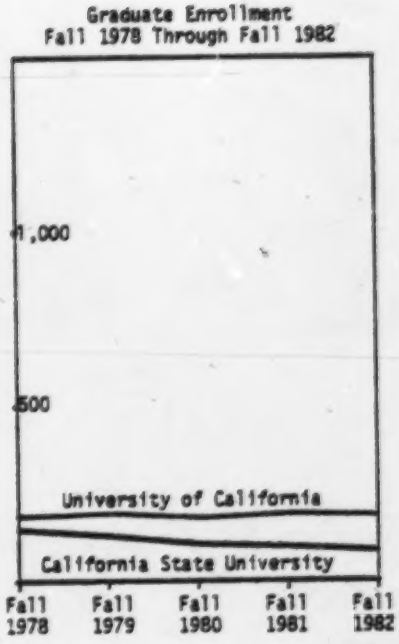
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 26 Letters: Philosophy

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	7	7	0.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	185	185	0.0%
Percent Men	71.3%	71.3%	0.0%
Percent Minority	13.6%	9.6%	- 4.0%
Percent Foreign	16.8%	25.0%	+ 8.2%
California State University	148	85	- 42.5%
Percent Men	73.4%	75.9%	+ 2.5%
Percent Minority	17.3%	31.0%	+ 13.7%
Percent Foreign	7.4%	7.7%	+ 0.3%
GRADUATE DEGREES			
University of California			
Masters	19	16	- 15.7%
Percent Men	70.6%	93.3%	+ 22.7%
Percent Minority	33.3%	0.0%	- 33.3%
Percent Foreign	12.5%	20.0%	+ 7.5%
Doctors	13	16	+ 23.0%
Percent Men	84.6%	81.2%	- 3.4%
Percent Minority	0.0%	0.0%	0.0%
Percent Foreign	50.0%	11.1%	- 38.9%
California State University			
Masters	23	8	- 65.2%
Percent Men	78.3%	100.0%	+ 21.7%
Percent Minority	60.0%	100.0%	+ 40.0%
Percent Foreign	0.0%	50.0%	+ 50.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	43	38	- 11.6%	1	5	+400.0%	2	9	+350.0%
Davis	21	13	- 38.1%	1	1	0.0%	1	0	-100.0%
Irvine	16	20	+ 25.0%	2	1	- 50.0%	1	0	-100.0%
Los Angeles	43	49	+ 13.9%	8	1	- 87.5%	5	3	-400.0%
Riverside	9	17	+ 88.9%	0	3	*	0	0	0.0%
San Diego	30	25	- 16.6%	-	3	- 57.1%	3	2	- 33.3%
Santa Barbara	23	23	0.0%	0	2	*	1	2	+100.0%
California State University									
Long Beach	19	13	- 31.6%	-	1	- 75.0%			
Los Angeles	15	18	+ 20.0%	3	0	-300.0%			
Northridge	14	4	- 71.4%	3	0	-300.0%			
San Diego	25	10	- 60.0%	2	2	0.0%			
San Francisco	42	17	- 59.5%	8	1	- 87.5%			
San Jose	15	13	- 13.3%	3	4	+ 33.3%			

Source: California Postsecondary Education Commission.

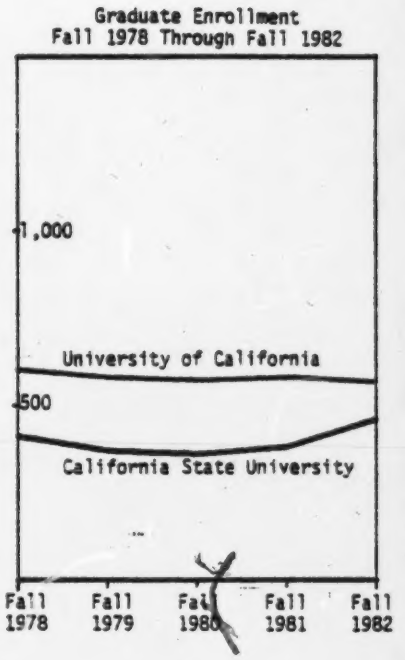
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 27 Mathematics, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	8	8	0.0%
California State University	13	13	0.0%
GRADUATE ENROLLMENTS			
University of California	603	567	- 5.9%
Percent Men	84.1%	82.2%	- 1.9%
Percent Minority	12.1%	17.4%	+ 5.3%
Percent Foreign	21.1%	27.9%	+ 6.8%
California State University	412	462	+ 12.1%
Percent Men	69.3%	66.8%	- 2.5%
Percent Minority	23.9%	29.6%	+ 5.7%
Percent Foreign	10.2%	11.1%	+ 0.9%
GRADUATE DEGREES			
University of California			
Masters	103	102	- 0.9%
Percent Men	79.6%	80.4%	- 0.8%
Percent Minority	10.2%	16.0%	+ 5.8%
Percent Foreign	11.8%	25.5%	+ 6.7%
Doctors	54	51	- 5.5%
Percent Men	87.0%	88.0%	+ 1.0%
Percent Minority	11.8%	28.6%	+ 16.8%
Percent Foreign	21.2%	34.0%	+ 12.8%
California State University			
Masters	66	51	- 22.7%
Percent Men	72.3%	62.5%	- 9.8%
Percent Minority	28.6%	50.0%	+ 21.4%
Percent Foreign	12.5%	32.3%	+ 19.8%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	233	221	- 5.1%	31	29	- 6.4%	33	22	- 33.3%
Davis	37	32	- 13.5%	10	7	- 30.0%	3	1	- 66.7%
Irvine	36	34	- 5.5%	1	9	+800.0%	0	4	*
Los Angeles	136	118	- 13.2%	29	32	+ 10.3%	10	8	-200.0%
Riverside	32	31	- 3.1%	6	7	+ 16.7%	2	2	0.0%
San Diego	63	51	- 19.0%	18	5	- 72.2%	4	8	+100.0%
Santa Barbara	49	54	+ 10.2%	7	10	+ 42.8%	2	5	+150.0%
Santa Cruz	17	26	+ 52.9%	1	3	+200.0%	0	1	*
California State University									
Fresno	15	19	0.0%	0	1	*			
Fullerton	20	39	+ 95.0%	7	8	+ 14.3%			
Hayward	16	31	+ 93.7%	4	2	- 50.0%			
Long Beach	40	47	+ 17.5%	7	3	- 57.1%			
Los Angeles	74	76	+ 2.7%	9	4	- 55.5%			
Northridge	39	26	- 33.3%	1	8	+700.0%			
Pomona	16	23	+ 43.7%	3	9	+200.0%			
Sacramento	31	10	- 67.7%	1	1	0.0%			
San Diego	34	22	- 35.2%	6	3	- 50.0%			
San Francisco	42	12	- 71.4%	6	2	- 66.7%			
San Jose	41	104	+153.6%	9	6	- 33.3%			
San Luis Obispo	15	15	0.0%	8	3	- 62.5%			
Sonoma	14	11	0.0%	5	1	- 80.0%			

Source: California Postsecondary Education Commission.

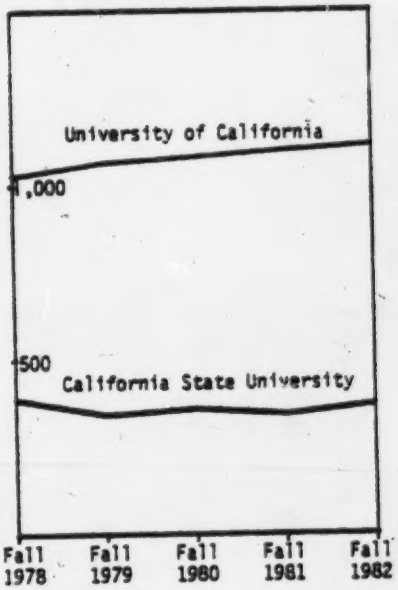
BEST COPY AVAILABLE

DISPLAY 28 Physical Sciences: Chemistry, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	8	8	0.0%
California State University	12	12	0.0%
GRADUATE ENROLLMENTS			
University of California	1,027	1,116	+ 8.6%
Percent Men	79.0%	77.8%	- 1.2%
Percent Minority	9.2%	14.5%	+ 5.3%
Percent Foreign	12.5%	13.6%	+ 1.1%
California State University	388	372	- 4.1%
Percent Men	72.5%	70.5%	- 2.0%
Percent Minority	26.3%	31.4%	+ 5.1%
Percent Foreign	17.3%	17.7%	+ 0.4%
GRADUATE DEGREES			
University of California			
Masters	101	78	- 22.7%
Percent Men	73.3%	79.5%	+ 6.2%
Percent Minority	7.3%	20.8%	+ 13.5%
Percent Foreign	10.0%	28.6%	+ 18.6%
Doctors	113	160	+ 41.5%
Percent Men	90.3%	80.6%	- 9.7%
Percent Minority	8.7%	12.6%	+ 3.9%
Percent Foreign	9.2%	11.6%	+ 2.4%
California State University			
Masters	61	72	+ 18.0%
Percent Men	81.7%	73.6%	- 8.1%
Percent Minority	30.0%	34.4%	+ 4.4%
Percent Foreign	17.4%	30.6%	+ 13.2%

Graduate Enrollment
Fall 1978 Through Fall 1982



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees: Masters 1977-78	Masters 1981-82	Masters Percent Change	Graduate Degrees: Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	322	374	+ 16.1%	17	9	- 47.1%	49	66	+ 34.6%
Davis	104	126	+ 21.1%	2	6	+200.0%	7	13	+ 85.7%
Irvine	75	99	+ 32.0%	6	4	- 66.7%	2	9	+350.0%
Los Angeles	160	156	- 2.5%	13	9	- 30.8%	20	24	+ 20.0%
Riverside	53	68	+ 28.2%	5	6	+ 20.0%	2	5	+150.0%
San Diego	164	148	- 9.7%	39	23	- 41.0%	13	26	+100.0%
Santa Barbara	93	87	- 6.5%	15	14	- 6.7%	11	12	+ 9.0%
Santa Cruz	56	58	+ 3.5%	4	7	+ 75.0%	9	5	+ 44.4%
California State University									
Fresno	22	21	- 4.5%	1	3	+200.0%			
Fullerton	23	26	+ 13.0%	7	5	- 28.6%			
Hayward	19	19	0.0%	1	1	0.0%			
Long Beach	31	34	+ 9.6%	2	5	+150.0%			
Los Angeles	39	29	- 25.6%	5	-	+ 28.6%			
Northridge	26	21	- 19.2%	1	2	+100.0%			
Pomona	18	24	+ 33.3%	6	3	- 50.0%			
Sacramento	24	34	+ 41.6%	0	3	*			
San Diego	58	60	+ 3.4%	13	16	+ 23.1%			
San Francisco	42	30	- 28.5%	11	5	- 54.5%	0	2	*
San Jose	50	38	- 24.0%	14	16	+ 14.3%			
San Luis Obispo	12	12	0.0%	0	6	*			

Source: California Postsecondary Education Commission.

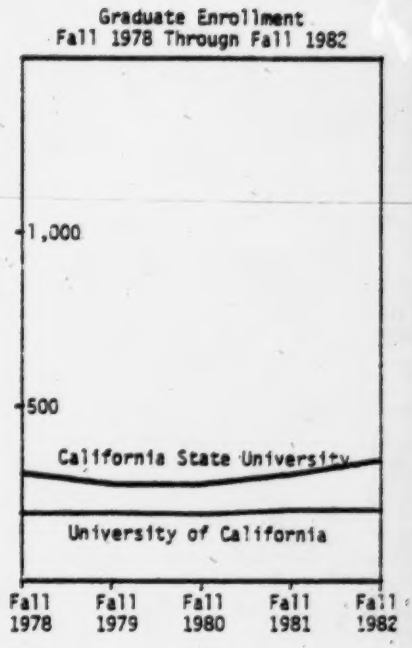
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 29 Physical Sciences: Geology

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	4	4	0.0%
California State University	6	6	0.0%
GRADUATE ENROLLMENTS			
University of California	193	204	+ 5.7%
Percent Men	74.6%	70.6%	- 4.0%
Percent Minority	12.0%	12.5%	+ 0.5%
Percent Foreign	9.8%	12.0%	+ 2.2%
California State University	308	347	+ 12.6%
Percent Men	77.6%	77.8%	+ 0.2%
Percent Minority	5.8%	9.2%	+ 3.4%
Percent Foreign	5.2%	3.7%	- 1.5%
GRADUATE DEGREES			
University of California			
Masters	30	22	- 26.6%
Percent Men	76.7%	86.4%	+ 9.7%
Percent Minority	0.0%	40.0%	+ 40.0%
Percent Foreign	20.0%	16.7%	- 3.3%
Doctors	16	23	+ 43.7%
Percent Men	93.3%	63.6%	- 29.7%
Percent Minority	0.0%	33.3%	+ 33.3%
Percent Foreign	14.3%	14.3%	0.0%
California State University			
Masters	27	47	+ 74.0%
Percent Men	80.8%	89.3%	+ 8.5%
Percent Minority	25.0%	10.5%	- 14.5%
Percent Foreign	0.0%	50.0%	+ 50.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	49	50	+ 2.0%	7	4	- 42.8%	7	8	+ 14.3%
Davis	48	54	+ 12.5%	3	6	+100.0%	1	3	+200.0%
Los Angeles	46	41	- 10.8%	5	6	+ 20.0%	5	7	+ 40.0%
Santa Barbara	50	59	+ 18.0%	9	6	- 33.3%	2	5	+150.0%
California State University									
Fresno	17	15	- 11.8%	6	6	0.0%			
Long Beach	38	39	+ 2.6%	1	0	-100.0%			
Los Angeles	63	55	- 12.7%	2	8	+300.0%			
Northridge	38	43	+ 13.1%	2	4	+100.0%			
San Diego	68	95	+ 39.7%	9	23	+155.5%			
San Jose	62	55	- 11.2%	7	6	- 14.3%			

Source: California Postsecondary Education Commission

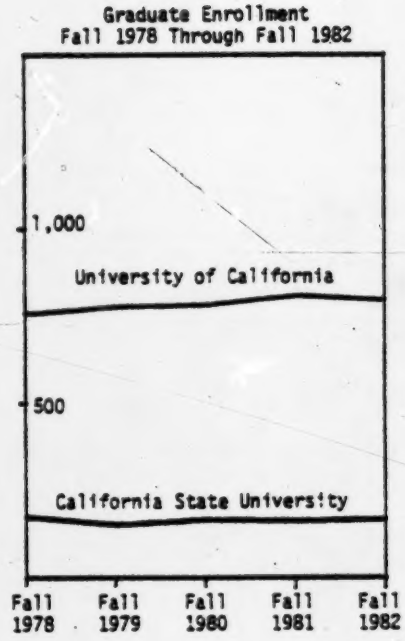
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 30 Physical Sciences: Physics, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	8	8	0.0%
California State University	7	7	0.0%
GRADUATE ENROLLMENTS			
University of California	757	795	+ 5.0%
Percent Men	93.8%	93.5%	- 0.3%
Percent Minority	9.8%	13.2%	+ 3.4%
Percent Foreign	18.4%	26.8%	+ 8.4%
California State University	174	167	- 4.0%
Percent Men	87.4%	83.2%	- 4.2%
Percent Minority	17.8%	19.0%	+ 1.2%
Percent Foreign	12.9%	10.2%	- 2.7%
GRADUATE DEGREES			
University of California			
Masters	109	113	+ 3.6%
Percent Men	96.2%	88.5%	- 7.7%
Percent Minority	7.9%	13.6%	+ 5.7%
Percent Foreign	28.3%	31.4%	+ 3.1%
Doctors	76	77	+ 0.1%
Percent Men	92.2%	92.2%	0.0%
Percent Minority	18.5%	17.9%	- 0.6%
Percent Foreign	95.5%	21.6%	- 3.9%
California State University			
Masters	24	31	+ 29.1%
Percent Men	91.7%	93.5%	+ 1.8%
Percent Minority	66.7%	50.0%	- 16.7%
Percent Foreign	42.9%	21.0%	- 21.9%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	259	246	- 5.0%	30	38	+ 26.7%	25	33	+ 32.0%
Davis	41	46	+ 12.2%	2	6	+200.0%	2	2	0.0%
Irvine	59	68	+ 15.2%	9	6	- 33.3%	1	4	+300.0%
Los Angeles	172	179	+ 4.0%	49	40	- 18.4%	18	10	- 44.4%
Riverside	43	51	+ 18.6%	5	9	+ 80.0%	2	4	+100.0%
San Diego	113	106	- 6.1%	9	9	0.0%	19	16	- 15.8%
Santa Barbara	47	73	+ 55.3%	5	3	- 40.0%	8	5	- 37.5%
Santa Cruz	23	26	+ 13.0%	0	2	*	1	3	+200.0%
California State University									
Fresno	19	10	- 47.4%	2	4	+100.0%			
Long Beach	26	25	- 4.0%	0	5	*			
Los Angeles	29	32	+ 10.3%	5	5	0.0%			
Northridge	25	30	+ 20.0%	6	5	- 16.7%			
San Diego	20	22	+ 10.0%	6	5	- 16.7%			
San Francisco	21	9	- 57.1%	0	1	*			
San Jose	15	23	+ 53.3%	5	4	- 20.0%			

Source: California Postsecondary Education Commission.

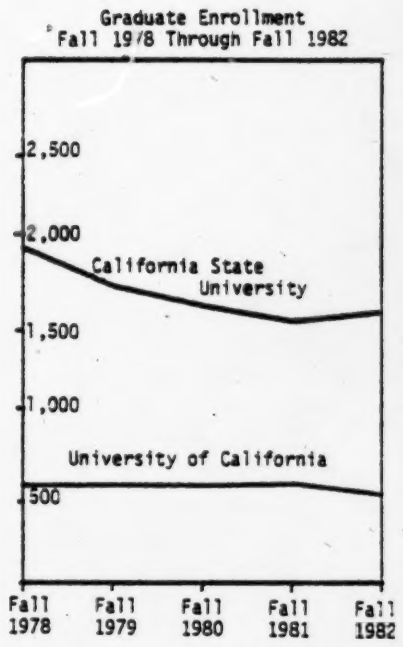
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 31 Psychology, General

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	9	9	0.0%
California State University	16	16	0.0%
GRADUATE ENROLLMENTS			
University of California	558	508	- 8.9%
Percent Men	51.2%	45.7%	- 5.5%
Percent Minority	17.9%	19.1%	+ 1.2%
Percent Foreign	7.4%	6.5%	- 0.9%
California State University	1,921	1,557	- 18.9%
Percent Men	47.8%	39.4%	- 8.4%
Percent Minority	16.1%	17.1%	+ 1.0%
Percent Foreign	3.3%	2.1%	- 1.2%
GRADUATE DEGREES			
University of California			
Masters	57	61	+ 7.0%
Percent Men	57.9%	44.8%	- 13.1%
Percent Minority	17.9%	34.6%	+ 16.7%
Percent Foreign	14.3%	11.5%	- 2.7%
Doctors	79	86	+ 8.8%
Percent Men	68.3%	52.3%	- 16.0%
Percent Minority	14.9%	17.2%	+ 2.3%
Percent Foreign	6.0%	0.0%	- 6.0%
California State University			
Masters	535	491	- 11.5%
Percent Men	48.8%	41.5%	- 7.3%
Percent Minority	18.8%	14.9%	- 3.9%
Percent Foreign	3.8%	13.9%	+ 10.1%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Fall 1982	Percent Change	Graduate Degrees: Masters 1977-78	1981-82	Percent Change	Doctors 1977-78	1981-82	Percent Change
University of California									
Berkeley	105	99	- 5.7%	8	8	0.0%	24	19	- 20.8%
Davis	25	25	0.0%	7	5	- 28.6%	10	11	+ 10.0%
Irvine	28	32	+ 14.2%	2	1	- 50.0%	3	4	+ 33.3%
Los Angeles	207	185	- 10.6%	22	28	+ 27.2%	26	31	+ 19.2%
Riverside	49	47	- 4.0%	6	3	- 50.0%	0	3	*
San Diego	47	0	-100.0%	8	9	+ 12.5%	13	7	- 46.2%
San Francisco	25	30	+ 20.0%	0	0	0.0%	3	1	- 66.7%
Santa Barbara	49	50	+ 2.0%	3	7	+133.3%	4	8	+100.0%
Santa Cruz	23	40	+ 73.9%	1	0	-100.0%	3	7	+133.3%
California State University									
Bakersfield	30	27	- 10.0%	7	6	- 14.3%			
Chico	126	85	- 32.5%	27	17	- 37.0%			
Dominguez Hills	69	75	+ 8.7%	3	13	+333.3%			
Fresno	111	57	- 48.6%	17	13	- 23.5%			
Fullerton	59	60	+ 1.6%	33	27	- 18.1%			
Humboldt	124	95	- 23.3%	25	25	0.0%			
Long Beach	166	89	- 46.3%	44	39	- 11.5%			
Los Angeles	428	326	- 23.8%	111	89	- 19.8%			
Northridge	148	147	- 0.6%	34	41	+ 20.5%			
Sacramento	127	96	- 24.4%	20	36	+ 80.0%			
San Bernardino	30	59	+ 96.6%	15	18	+ 20.0%			
San Diego	128	106	- 17.1%	37	17	- 54.0%			
San Francisco	110	71	- 35.4%	65	53	- 18.4%			
San Jose	113	92	- 18.5%	53	52	- 1.8%			
Sonoma	112	134	+ 19.6%	57	31	- 45.6%			
Stanislaus	37	34	- 8.1%	-	14	+100.0%			

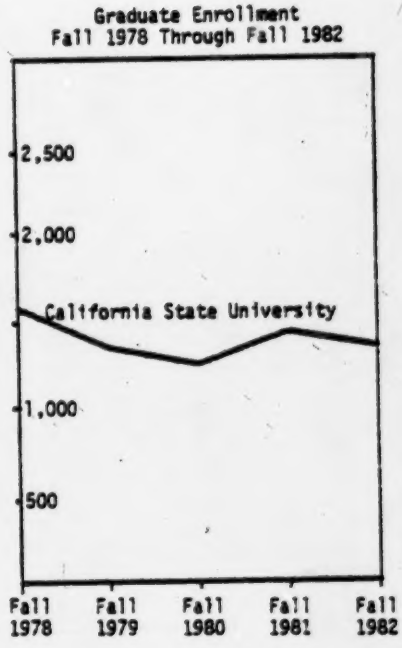
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 32 Public Affairs and Services: Public Administration

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	0	0	0.0%
California State University	12	15	+ 25.0%
GRADUATE ENROLLMENTS			
University of California			
Percent Men			
Percent Minority			
Percent Foreign			
California State University	1,572	1,344	- 14.5%
Percent Men	63.9%	54.5%	- 9.4%
Percent Minority	31.3%	34.1%	+ 2.8%
Percent Foreign	3.8%	5.1%	+ 1.3%
GRADUATE DEGREES			
University of California			
Masters			
Percent Men			
Percent Minority			
Percent Foreign			
Doctors			
Percent Men			
Percent Minority			
Percent Foreign			
California State University	430	340	- 20.9%
Masters	72.3%	57.4%	- 14.9%
Percent Men	21.2%	31.4%	+ 10.2%
Percent Minority	4.6%	9.5%	+ 4.9%
Percent Foreign			



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
California State University									
Bakersfield	17	59	+247.0%	12	3	- 75.0%			
Chico	54	59	+ 9.2%	4	11	+175.0%			
Dominguez Hills	103	150	+ 45.6%	16	42	+162.5%			
Fresno	2	34	+1600.0%	0	0	0.0%			
Fullerton	107	102	- 4.6%	49	27	- 44.9%			
Hayward	212	205	- 3.3%	84	59	- 29.7%			
Long Beach	405	238	- 41.2%	98	59	- 39.8%			
Los Angeles	205	83	- 59.5%	27	20	- 35.0%			
Northridge	7	6	- 14.3%	0	1	*			
Sacramento	129	96	- 24.0%	17	30	+ 76.0%			
San Bernardino	0	36	*	2	0	-200.0%			
San Diego	142	97	- 31.6%	49	28	- 40.9%			
San Francisco	0	65	*	0	10	*			
San Jose	108	54	- 50.0%	24	29	+ 20.8%			
Stanislaus	81	58	- 28.4%	17	23	+ 35.3%			

Source: California Postsecondary Education Commission.

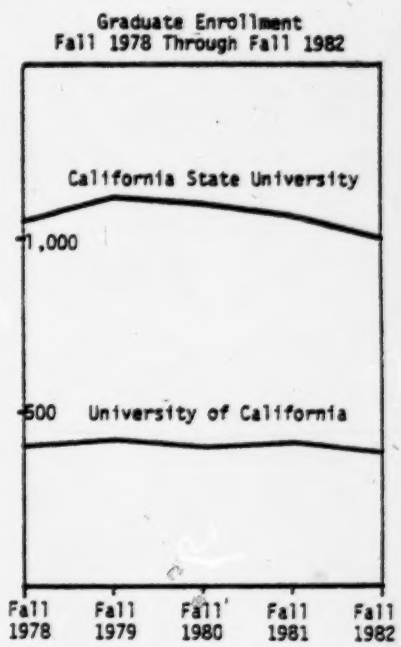
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 33 Public Affairs and Services: Social Work and Helping Service

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	2	2	0.0%
California State University	5	5	0.0%
GRADUATE ENROLLMENTS			
University of California	403	383	- 4.9%
Percent Men	34.9%	22.4%	- 12.5%
Percent Minority	22.2%	30.0%	+ 7.8%
Percent Foreign	8.4%	2.1%	- 6.3%
California State University	1,050	999	- 4.8%
Percent Men	32.8%	24.6%	- 8.2%
Percent Minority	28.1%	24.3%	- 3.8%
Percent Foreign	1.7%	1.7%	0.0%
GRADUATE DEGREES			
University of California			
Masters	161	170	+ 5.5%
Percent Men	33.5%	22.5%	- 11.0%
Percent Minority	35.4%	30.8%	- 4.6%
Percent Foreign	2.5%	2.4%	- 0.1%
Doctors	20	18	- 10.0%
Percent Men	45.0%	33.3%	- 11.7%
Percent Minority	12.5%	57.1%	+ 44.6%
Percent Foreign	10.0%	9.1%	- 0.9%
California State University			
Masters	263	405	+ 53.9%
Percent Men	29.3%	24.2%	- 5.1%
Percent Minority	23.2%	22.1%	- 1.1%
Percent Foreign	2.0%	6.2%	+ 4.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	236	225	- 4.0%	92	101	+ 9.7%	15	11	- 26.7%
Los Angeles	167	158	- 5.3%	69	69	0.0%	5	7	+ 16.7%
California State University									
Fresno	190	170	- 10.5%	66	52	- 21.2%			
Sacramento	262	264	- 0.7%	19	114	+500.0%			
San Diego	300	268	- 10.6%	85	139	+ 63.5%			
San Francisco	152	170	+ 11.8%	56	50	- 10.7%			
San Jose	116	103	- 11.2%	37	50	+ 35.1%			

BEST COPY AVAILABLE

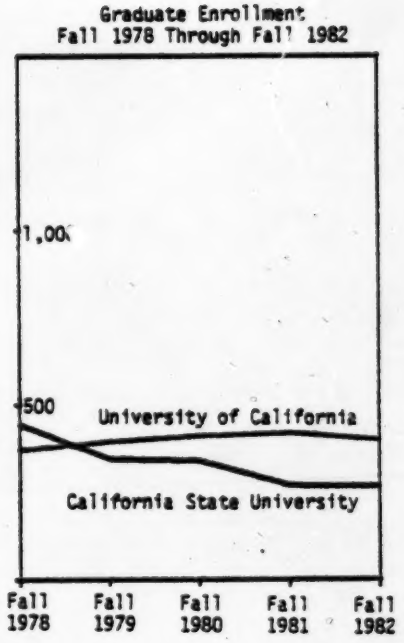
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 34 Social Sciences: Anthropology

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	6	0.0%
California State University	9	9	0.0%
GRADUATE ENROLLMENTS			
University of California	372	400	+ 7.5%
Percent Men	45.2%	43.2%	- 2.0%
Percent Minority	14.3%	16.7%	+ 2.4%
Percent Foreign	8.8%	10.8%	+ 2.0%
California State University	444	267	- 39.8%
Percent Men	41.3%	42.1%	+ 0.8%
Percent Minority	11.8%	11.1%	- 0.7%
Percent Foreign	2.9%	5.4%	+ 1.5%
GRADUATE DEGREES			
University of California			
Masters	72	67	- 6.9%
Percent Men	40.3%	25.4%	- 14.9%
Percent Minority	9.6%	24.4%	+ 14.8%
Percent Foreign	8.2%	21.7%	+ 13.5%
Doctors	41	47	+ 14.6%
Percent Men	70.7%	63.0%	- 7.7%
Percent Minority	9.1%	12.0%	+ 2.9%
Percent Foreign	21.0%	17.2%	- 3.8%
California State University			
Masters	56	52	- 7.1%
Percent Men	53.6%	30.6%	- 23.0%
Percent Minority	27.3%	16.7%	- 10.6%
Percent Foreign	18.8%	20.0%	+ 1.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	89	104	+ 16.8%	21	23	+ 9.5%	19	13	- 31.5%
Davis	46	29	- 36.9%	10	6	- 40.0%	4	4	0.0%
Los Angeles	135	144	+ 6.6%	30	22	- 26.6%	9	16	+ 77.8%
Riverside	37	37	0.0%	4	3	- 25.0%	2	6	+200.0%
San Diego	25	36	+ 44.0%	0	4	*	5	1	- 80.0%
Santa Barbara	40	50	+ 25.0%	7	9	+ 28.8%	2	7	+250.0%
California State University									
Chico	31	21	- 32.2%	5	3	- 40.0%			
Fullerton	49	36	- 26.5%	2	5	+150.0%			
Hayward	29	12	- 58.6%	7	4	- 42.8%			
Long Beach	42	25	- 40.4%	3	2	- 33.3%			
Los Angeles	43	25	- 41.8%	12	1	- 91.7%			
Northridge	48	26	- 45.8%	5	14	+ 64.3%			
Sacramento	43	40	- 6.9%	4	7	+ 75.0%			
San Diego	60	36	- 40.0%	9	9	0.0%			
San Francisco	65	30	- 53.8%	9	7	- 22.2%			

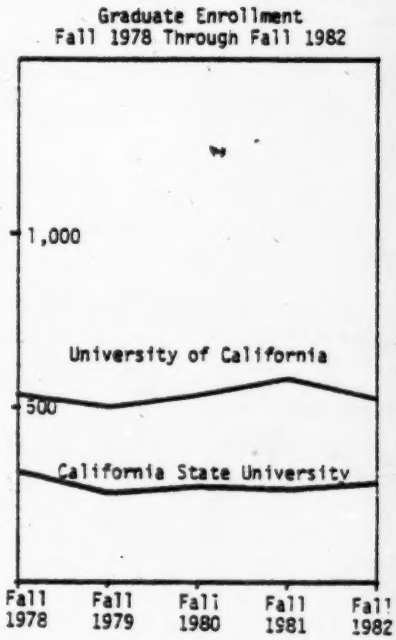
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 35 Social Sciences: Economics

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	6	7	+ 16.7%
California State University	9	9	0.0%
GRADUATE ENROLLMENTS			
University of California	538	526	- 2.2%
Percent Men	82.5%	78.5%	- 4.0%
Percent Minority	10.8%	15.0%	+ 4.2%
Percent Foreign	28.8%	31.3%	+ 2.5%
California State University	317	285	- 10.0%
Percent Men	77.0%	75.7%	- 1.3%
Percent Minority	25.8%	36.3%	+ 10.5%
Percent Foreign	30.1%	24.1%	- 6.0%
GRADUATE DEGREES			
University of California			
Masters	92	96	+ 4.3%
Percent Men	78.3%	80.2%	+ 1.9%
Percent Minority	12.5%	17.1%	+ 4.6%
Percent Foreign	36.1%	28.3%	+ 2.2%
Doctors	58	55	- 5.1%
Percent Men	91.4%	92.7%	+ 1.3%
Percent Minority	9.7%	22.2%	+ 12.5%
Percent Foreign	21.8%	20.0%	- 1.8%
California State University			
Masters	59	55	- 6.7%
Percent Men	79.6%	80.0%	+ 0.4%
Percent Minority	20.0%	50.0%	+ 30.0%
Percent Foreign	21.9%	52.8%	+ 30.9%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	144	124	- 13.8%	23	10	- 56.5%	27	23	- 14.8%
Davis	61	58	- 4.9%	7	3	- 57.1%	1	5	+400.0%
Los Angeles	143	131	- 8.3%	23	27	+ 17.3%	19	9	- 52.6%
Riverside	41	49	+ 19.5%	4	14	+400.0%	2	8	+300.0%
San Diego	60	58	- 3.3%	9	9	0.0%	2	7	+250.0%
Santa Barbara	89	93	+ 4.4%	26	27	+ 3.8%	7	3	- 57.1%
Santa Cruz	0	13	*	0	6	*	0	0	0.0%
California State University									
Fullerton	14	15	+ 7.1%	4	5	+ 25.0%			
Hayward	19	15	- 21.0%	4	2	- 50.0%			
Long Beach	29	32	+ 10.3%	10	7	- 30.0%			
Los Angeles	30	49	+ 63.3%	2	3	+ 50.0%			
Pomona	37	14	- 62.1%	0	0	0.0%			
Sacramento	38	38	0.0%	6	6	0.0%			
San Diego	33	35	+ 6.0%	6	6	0.0%			
San Jose	26	31	+ 19.2%	3	5	+ 66.7%			

Source: California Postsecondary Education Commission.

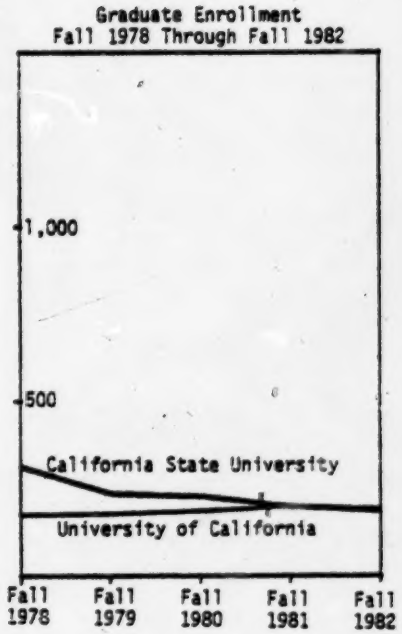
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 36 Social Sciences: Geography

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	5	5	0.0%
California State University	10	10	0.0%
GRADUATE ENROLLMENTS			
University of California	174	183	+ 5.1%
Percent Men	69.5%	63.9%	- 5.6%
Percent Minority	6.6%	11.4%	+ 4.8%
Percent Foreign	9.7%	14.9%	+ 5.2%
California State University	313	190	- 39.3%
Percent Men	65.8%	67.8%	+ 2.0%
Percent Minority	10.2%	18.6%	+ 8.4%
Percent Foreign	8.3%	6.4%	- 1.9%
GRADUATE DEGREES			
University of California			
Masters	22	42	+ 90.9%
Percent Men	55.0%	80.9%	+ 25.9%
Percent Minority	12.5%	16.7%	+ 4.2%
Percent Foreign	10.0%	35.7%	+ 25.7%
Doctors	13	14	+ 7.6%
Percent Men	69.2%	71.4%	+ 2.2%
Percent Minority	33.3%	0.0%	- 33.3%
Percent Foreign	14.3%	33.3%	+ 19.0%
California State University			
Masters	49	33	- 32.6%
Percent Men	79.6%	77.4%	- 2.2%
Percent Minority	19.0%	50.0%	+ 31.0
Percent Foreign	50.0%	50.0%	0.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	45	39	- 13.3%	10	6	- 40.0%	6	6	0.0%
Davis	21	8	- 16.9%	2	6	+200.0%	0	1	*
Los Angeles	66	62	- 6.0%	8	5	- 37.5%	7	6	- 14.3%
Riverside	16	28	+ 75.0%	0	3	*	0	1	*
Santa Barbara	26	43	+ 65.3%	2	22	+1000.0%			
California State University									
Chico	13	10	- 23.1%	3	1	- 66.7%			
Fresno	18	9	- 50.0%	4	2	- 50.0%			
Fullerton	18	25	+ 38.8%	2	2	0.0%			
Hayward	16	16	0.0%	4	3	- 25.0%			
Long Beach	24	8	- 66.6%	1	0	-700.0%			
Los Angeles	27	13	- 51.8%	8	2	- 75.0%			
Northridge	55	34	- 38.1%	6	2	- 66.7%			
San Diego	55	32	- 41.8%	9	8	- 11.1%			
San Francisco	40	27	- 32.5%	2	5	+150.0%			
San Jose	31	14	- 54.8%	4	8	+100.0%			

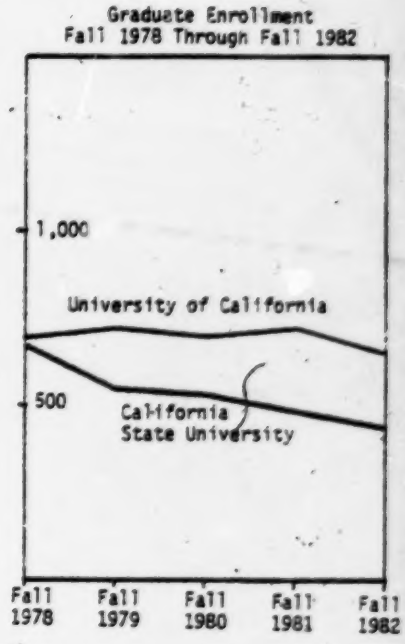
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 37 Social Sciences: History

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	8	8	0.0%
California State University	14	14	0.0%
GRADUATE ENROLLMENTS			
University of California	695	649	- 6.6%
Percent Men	63.6%	54.9%	- 8.7%
Percent Minority	13.9%	15.8%	+ 1.9%
Percent Foreign	8.9%	9.8%	+ 0.9%
California State University	671	436	- 35.0%
Percent Men	63.5%	63.3%	- 0.2%
Percent Minority	16.2%	17.8%	+ 1.6%
Percent Foreign	5.5%	6.1%	+ 0.6%
GRADUATE DEGREES			
University of California			
Masters	129	93	- 26.3%
Percent Men	64.3%	62.1%	- 2.2%
Percent Minority	15.6%	18.0%	+ 2.4%
Percent Foreign	7.4%	14.7%	+ 7.3%
Doctors	75	56	- 25.3%
Percent Men	73.3%	58.9%	- 14.4%
Percent Minority	15.6%	13.6%	- 2.0%
Percent Foreign	15.2%	0.0%	- 15.2%
California State University			
Masters	123	81	- 34.1%
Percent Men	70.7%	53.1%	- 17.6%
Percent Minority	30.0%	20.0%	- 10.0%
Percent Foreign	7.3%	14.3%	+ 7.0%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	146	116	- 20.5%	25	21	- 16.0%	29	13	- 55.1%
Davis	46	40	- 13.0%	9	4	- 55.6%	2	2	0.0%
Irvine	37	45	+ 21.6%	5	6	+ 20.0%	2	2	0.0%
Los Angeles	264	235	- 10.9%	38	37	- 2.6%	27	23	- 14.8%
Riverside	38	57	+ 50.0%	14	9	- 35.7%	2	1	- 50.0%
San Diego	42	68	+ 61.9%	16	7	- 47.4%	4	5	+ 25.0%
Santa Barbara	120	78	- 35.0%	21	9	- 5.7%	9	10	+ 11.1%
Santa Cruz	2	10	0.0%	1	2	+100.0%	0	0	0.0%
California State University									
Bakersfield	19	11	- 42.1%	4	0	-100.0%			
Chico	26	13	- 53.5%	7	5	- 28.6%			
Fresno	30	29	- 3.3%	3	1	- 66.7%			
Fullerton	68	48	- 29.4%	7	9	+ 28.6%			
Hayward	22	18	- 18.1%	6	7	+ 16.7%			
Long Beach	77	40	- 48.0%	7	3	- 57.1%			
Los Angeles	78	50	- 35.9%	16	6	- 62.5%			
Northridge	73	44	- 39.7%	13	9	- 30.8%			
Sacramento	53	37	- 30.1%	2	7	+250.0%			
San Diego	52	44	- 15.3%	13	4	- 69.2%			
San Francisco	75	36	- 52.7%	16	12	- 25.0%			
San Jose	49	26	- 46.9%	18	7	- 61.1%			
Sonoma	26	19	- 26.9%	3	2	- 33.3%			
Stanislaus	14	10	- 28.5%	8	9	+ 12.5%			

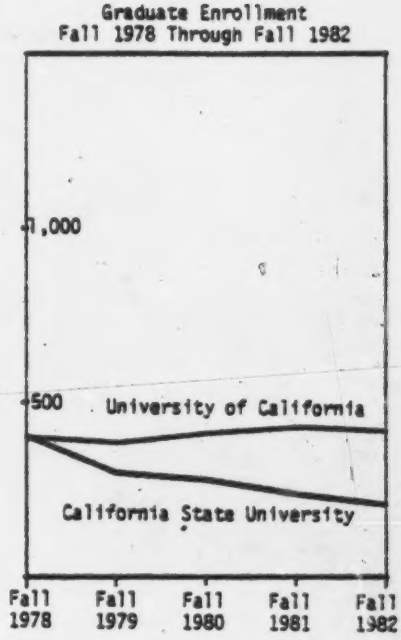
Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

DISPLAY 38 Social Sciences: Political Science and Government

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	7	7	0.0%
California State University	11	11	0.0%
GRADUATE ENROLLMENTS			
University of California	401	418	+ 4.2%
Percent Men	71.5%	68.9%	- 2.6%
Percent Minority	15.2%	15.7%	+ 0.5%
Percent Foreign	13.2%	15.0%	+ 1.8%
California State University	404	204	- 49.0%
Percent Men	69.1%	62.6%	- 6.5%
Percent Minority	27.9%	28.3%	+ 0.4%
Percent Foreign	7.4%	13.6%	+ 6.2%
GRADUATE DEGREES			
University of California			
Masters	57	110	+ 92.9%
Percent Men	73.7%	61.8%	- 11.9%
Percent Minority	16.7%	12.2%	- 4.5%
Percent Foreign	12.8%	12.2%	+ 3.4%
Doctors	31	31	0.0%
Percent Men	83.9%	80.6%	- 3.3%
Percent Minority	50.0%	50.0%	0.0%
Percent Foreign	16.8%	24.1%	+ 7.3%
California State University			
Masters	78	39	- 50.0%
Percent Men	74.4%	76.9%	+ 2.5%
Percent Minority	20.5%	42.9%	+ 22.4%
Percent Foreign	26.3%	37.5%	+ 11.2%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees: Masters 1977-78	Masters 1981-82	Masters Percent Change	Doctors 1977-78	Doctors 1981-82	Doctors Percent Change
University of California									
Berkeley	186	177	- 4.8%	16	60	+275.0%	17	21	+ 23.5%
Davis	21	31	+ 47.6%	6	7	+ 16.7%	0	0	0.0%
Irvine	2	4	+100.0%	0	0	0.0%	0	0	0.0%
Los Angeles	79	85	+ 7.5%	21	25	+ 19.0%	6	3	- 50.0%
Riverside	45	42	- 6.6%	4	4	0.0%	5	6	- 16.7%
San Diego	0	13	*	0	0	0.0%	0	0	0.0%
Santa Barbara	71	66	- 7.0%	10	14	+ 40.0%	7	5	- 28.6%
California State University									
Chico	8	9	+ 12.5%	5	2	- 60.0%			
Fresno	11	10	- 9.0%	1	1	0.0%			
Fullerton	27	14	- 48.1%	4	4	0.0%			
Long Beach	35	24	- 31.4%	6	7	+ 16.7%			
Los Angeles	51	35	- 31.3%	10	3	- 70.0%			
Northridge	42	4	- 90.4%	1	0	-100.0%			
Sacramento	37	28	- 24.3%	6	5	- 16.7%			
San Diego	25	14	- 44.0%	6	2	- 66.7%			
San Francisco	82	7	- 91.4%	18	3	- 83.3%			
San Jose	33	16	- 51.5%	13	6	- 53.8%			
Sonoma	43	31	- 27.9%	6	6	0.0%			

Source: California Postsecondary Education Commission.

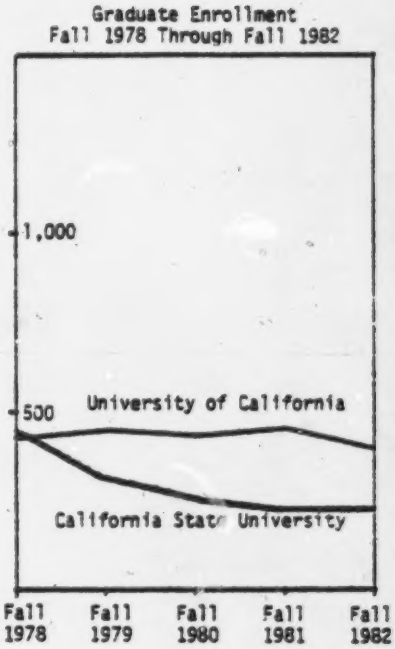
BEST COPY AVAILABLE

BEST COPY AVAILABLE

DISPLAY 39 Social Sciences: Sociology

SEGMENTAL INFORMATION

Program Characteristic	1978	1982	Percent or Percentage Point Change
NUMBER OF GRADUATE PROGRAMS			
University of California	8	8	0.0%
California State University	10	10	0.0%
GRADUATE ENROLLMENTS			
University of California	426	398	- 6.5%
Percent Men	51.4%	44.3%	- 7.1%
Percent Minority	28.1%	23.7%	- 4.4%
Percent Foreign	10.1%	11.2%	+ 1.1%
California State University	449	231	- 48.5%
Percent Men	45.1%	44.5%	- 0.6%
Percent Minority	36.5%	37.9%	+ 1.4%
Percent Foreign	7.6%	12.9%	+ 5.3%
GRADUATE DEGREES			
University of California			
Masters	66	54	- 18.1%
Percent Men	45.4%	42.6%	- 2.8%
Percent Minority	23.5%	24.2%	+ 0.7%
Percent Foreign	15.2%	15.2%	0.0%
Doctors	36	36	0.0%
Percent Men	57.1%	67.7%	+ 10.6%
Percent Minority	31.3%	15.8%	- 15.5%
Percent Foreign	7.7%	15.4%	+ 7.7%
California State University			
Masters	74	34	- 54.0%
Percent Men	46.4%	73.9%	+ 26.7%
Percent Minority	22.7%	60.0%	+ 37.3%
Percent Foreign	14.3%	0.0%	- 14.3%



CAMPUS INFORMATION

Segment and Campus	Graduate Enrollments Fall 1978	Graduate Enrollments Fall 1982	Graduate Enrollments Percent Change	Graduate Degrees Masters 1977-78	Graduate Degrees Masters 1981-82	Graduate Degrees Masters Percent Change	Graduate Degrees Doctors 1977-78	Graduate Degrees Doctors 1981-82	Graduate Degrees Doctors Percent Change
University of California									
Berkeley	105	97	- 7.6%	11	16	+ 45.5%	13	14	+ 7.7%
Davis	26	22	- 15.3%	6	2	- 66.6%	2	3	+ 50.0%
UCLA	100	101	+ 1.0%	16	10	- 37.5%	8	11	+ 37.5%
Riverside	38	30	- 21.0%	4	6	+ 50.0%	0	0	0.0%
San Diego	54	58	+ 7.4%	9	10	+ 11.1%	1	3	+200.0%
San Francisco	25	24	- 4.0%	0	0	0.0%	3	2	- 33.3%
Santa Barbara	51	42	- 17.6%	5	4	- 20.0%	9	2	- 77.8%
Santa Cruz	27	24	- 11.1%	15	6	- 60.0%	0	1	*
California State University									
Chico	9	11	+ 22.2%	13	3	- 76.9%			
Dominguez Hills	8	29	+262.5%	0	2	*			
Fullerton	32	23	- 28.1%	7	5	- 28.6%			
Hayward	13	23	- 76.9%	4	2	- 50.0%			
Humboldt	17	14	- 17.6%	1	2	+100.0%			
Los Angeles	104	49	- 52.8%	5	4	- 20.0%			
Northridge	48	25	- 47.9%	4	2	- 50.0%			
Sacramento	28	19	- 32.1%	5	2	- 60.0%			
San Diego	51	21	- 58.8%	10	1	- 90.0%			
San Jose	36	8	- 77.7%	8	4	- 50.0%			

Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

APPENDIX B

Ethnicity of Graduate Students and Degree Recipients by Field of Study in California's Public Universities, 1978 and 1982

TABLE 14 Ethnicity of University of California Graduate Students by Field of Study, Fall 1978 and Fall 1982 119

TABLE 15 Ethnicity of California State University Graduate Students by Field of Study, Fall 1978 and Fall 1982 119

TABLE 16 Ethnicity of University of California Master's Degree Recipients by Field of Study, 1978-79 and 1982-83 120

TABLE 17 Ethnicity of University of California Doctoral Degree Recipients by Field of Study, 1978-79 and 1982-83 120

TABLE 18 Ethnicity of California State University Master's Degree Recipients by Field of Study, 1978-79 and 1982-83 121

TABLE 14 Ethnicity of University of California Graduate Students by Field of Study, Fall 1978 and Fall 1982*

Discipline Divisions	Asian or Pacific Islander		Black		Hispanic		White		Number of Students Who Declared Their Ethnicity	
	1978	1982	1978	1982	1978	1982	1978	1982	1978	1982
Agriculture and Natural Resources	5.4	5.7	0.9	1.5	3.2	2.4	88.7	89.1	409	453
Architecture and Environmental Design	7.8	8.4	5.0	5.4	5.7	7.3	78.1	76.4	535	521
Biological Sciences	7.7	7.6	1.1	1.4	1.9	3.2	87.0	86.0	2,588	2,302
Business and Management	7.1	7.9	2.5	3.5	3.9	5.9	85.7	81.0	1,632	1,809
Communications	3.4	1.5	1.7	2.9	0.0	2.9	91.5	89.7	59	68
Computer and Information Sciences	7.1	14.8	0.6	2.3	1.7	2.3	88.2	79.2	297	384
Education	4.2	4.4	6.6	6.2	7.5	8.3	79.2	78.6	1,810	1,484
Engineering	14.4	20.4	1.3	1.2	2.3	1.7	79.4	74.6	1,643	1,772
Fine and Applied Arts	3.6	5.5	4.9	4.1	4.8	4.6	84.8	83.1	982	963
Foreign Languages	3.2	4.3	2.1	1.0	14.5	18.4	78.1	74.1	358	468
Home Economics	0.0	7.2	3.5	0.0	0.0	0.0	96.4	92.8	28	14
Letters	2.3	4.6	2.0	2.1	3.3	3.3	89.4	87.7	1,186	1,131
Library Science	4.5	3.2	2.9	1.8	3.6	7.4	87.7	86.1	308	216
Mathematics	6.8	10.4	2.0	1.9	3.1	4.8	84.6	79.2	487	414
Physical Sciences	5.5	7.9	0.5	0.8	1.4	2.7	90.5	86.9	1,933	1,832
Psychology	3.4	4.4	5.6	4.0	6.4	7.2	83.3	82.2	497	428
Public Affairs and Services	9.5	7.7	10.4	6.8	11.7	11.4	66.5	70.2	367	352
Social Sciences	3.8	4.8	4.1	4.0	5.9	6.5	83.9	82.8	2,120	1,908
All Fields	7.0	9.6	3.9	3.7	5.2	6.0	81.4	78.6	17,587	16,761

*Excluding first professional degree students in the health professions and law, and graduate students in miscellaneous programs.

TABLE 15 Ethnicity of California State University Graduate Students by Field of Study, Fall 1978 and Fall 1982

Discipline Divisions	Asian or Pacific Islander		Black		Hispanic		White		Number of Students Who Declared Their Ethnicity	
	1978	1982	1978	1982	1978	1982	1978	1982	1978	1982
Agriculture and Natural Resources	3.8	3.5	1.3	0.6	2.4	2.6	85.3	88.1	368	311
Architecture and Environmental Design	6.8	6.8	1.8	1.9	5.0	6.4	85.8	79.6	219	265
Biological Sciences	8.8	10.2	1.6	3.2	3.0	4.6	80.8	78.1	1,389	1,029
Business and Management	11.9	11.4	3.9	2.7	3.0	3.3	76.9	79.4	5,092	6,698
Communications	2.7	3.2	7.8	5.6	4.6	3.8	80.0	84.4	370	340
Computer and Information Sciences	13.7	23.9	2.5	2.9	1.5	3.1	77.5	66.4	400	1,235
Education	5.5	4.1	6.9	5.8	8.1	9.9	74.6	76.2	9,294	8,971
Engineering	20.8	30.5	2.1	2.2	5.1	4.2	64.6	57.6	1,229	2,163
Fine and Applied Arts	4.7	6.3	3.5	3.4	4.0	6.0	82.7	79.0	1,875	1,576
Foreign Languages	5.8	8.8	2.5	2.6	29.6	27.2	58.1	56.0	432	305
Health Professions	6.7	6.7	4.9	4.7	3.8	5.0	79.5	78.5	2,483	2,531
Home Economics	8.4	7.3	4.2	4.3	4.2	3.0	77.7	81.1	497	462
Letters	3.6	2.8	3.6	3.0	4.2	5.3	83.0	83.6	1,792	1,592
Library Science	5.4	6.0	0.0	2.4	2.7	1.2	87.7	84.1	73	82
Mathematics	14.7	15.5	3.5	2.4	2.9	5.8	75.4	70.3	313	380
Physical Sciences	8.6	8.4	1.7	2.2	2.5	3.3	80.6	80.8	628	726
Psychology	3.9	3.8	7.3	6.1	5.0	6.8	79.5	78.8	1,863	1,735
Public Affairs and Services	5.0	4.7	11.4	10.1	7.4	10.5	70.4	69.9	2,353	2,297
Social Sciences	5.0	4.3	6.0	5.5	6.6	10.8	76.1	74.3	2,122	1,520
All Fields	5.6	7.8	6.0	5.1	8.0	7.6	74.3	75.1	33,401	34,970

Sources: California Postsecondary Education Commission.

BEST COPY AVAILABLE

TABLE 16 Ethnicity of University of California Master's Degree Recipients by Field of Study, 1978-79 and 1982-83

Discipline Divisions	Asian or Pacific Islander		Black		Hispanic		White		Number of Students Who Declared Their Ethnicity	
	1978	1982	1978	1982	1978	1982	1978	1982	1978	1982
Agriculture and Natural Resources	2.7	6.5	0.0	3.2	0.0	3.2	90.9	70.7	110	123
Architecture and Environmental Design	8.7	6.0	11.2	4.2	4.3	6.0	70.2	68.8	161	215
Biological Sciences	5.0	5.5	0.8	0.9	0.8	2.8	88.8	79.2	260	216
Business and Management	6.2	8.5	3.0	2.6	3.0	3.6	85.0	77.0	661	809
Communications	0.0	0.0	0.0	0.0	6.2	0.0	87.5	100.0	16	10
Computer and Information Sciences	9.0	12.5	0.0	0.8	0.0	0.0	87.3	77.0	55	112
Education	3.3	6.3	3.8	3.7	3.8	5.3	83.7	75.8	209	190
Engineering	13.8	17.8	0.9	0.9	1.7	2.9	78.9	71.8	521	556
Fine and Applied Arts	5.4	4.0	2.5	3.0	1.8	4.0	87.2	72.2	281	299
Foreign Languages	0.9	0.0	1.8	0.0	8.0	9.0	77.0	75.0	113	88
Health Professions	5.9	6.5	8.0	4.4	1.6	5.6	80.4	74.5	663	585
Home Economics	6.9	0.0	0.0	0.0	0.0	0.0	89.6	81.3	29	6
Letters	2.6	3.1	1.6	1.0	1.6	3.1	90.4	81.3	188	193
Library Science	4.5	6.0	3.2	1.0	1.3	2.0	88.4	84.8	155	99
Mathematics	6.7	9.8	4.4	0.0	2.2	3.7	84.4	76.5	90	81
Physical Sciences	4.8	7.2	1.7	0.5	1.3	1.0	90.3	78.3	228	194
Psychology	3.9	11.9	3.9	2.4	5.9	7.1	84.3	73.8	51	42
Public Affairs and Services	11.1	6.7	7.4	9.7	12.4	12.1	62.1	66.7	161	165
Social Sciences	3.5	3.9	5.1	2.5	3.5	6.5	84.0	80.4	370	353
All Fields	6.2	7.7	3.7	2.7	2.7	4.3	83.0	67.5*	4,425	4,512

*Higher "other" category than in 1978.

TABLE 17 Ethnicity of University of California Doctoral Degree Recipients, by Field of Study, 1978-79 and 1982-83

Discipline Divisions	Asian or Pacific Islander		Black		Hispanic		White		Number of Students Who Declared Their Ethnicity	
	1978	1982	1978	1982	1978	1982	1978	1982	1978	1982
Agriculture and Natural Resources	9.5	3.3	0.0	3.3	0.0	3.3	90.5	76.7	21	30
Architecture and Environmental Design	0.0	0.0	10.0	6.7	10.0	0.0	80.0	66.7	10	15
Biological Sciences	4.1	8.0	2.2	1.4	1.3	3.4	88.6	75.7	316	346
Business and Management	0.0	15.0	0.0	5.0	0.0	0.0	100.0	65.0	24	20
Computer and Information Sciences	9.0	0.0	0.0	0.0	0.0	0.0	91.7	81.2	11	16
Education	4.3	4.2	5.4	9.3	6.5	5.0	81.5	71.2	92	118
Engineering	10.0	17.6	0.8	1.6	0.0	0.8	86.7	69.6	120	125
Fine and Applied Arts	0.0	0.0	0.0	3.8	0.0	0.0	96.9	42.3	32	26
Foreign Languages	0.0	2.8	3.8	0.0	3.8	17.1	88.5	48.6	26	35
Health Professions	5.0	4.0	5.0	2.0	0.0	2.0	90.0	79.6	40	49
Home Economics	33.3	0.0	0.0	0.0	0.0	0.0	66.6	0.0	3	0
Letters	0.0	1.0	0.0	0.0	3.9	1.0	93.4	72.8	76	92
Mathematics	4.9	9.3	2.4	0.0	0.0	2.3	87.8	74.4	41	43
Physical Sciences	6.2	7.0	1.3	0.0	0.0	1.0	87.7	72.4	227	286
Psychology	1.4	2.4	7.1	3.7	1.4	6.2	87.1	69.1	70	81
Public Affairs and Services	0.0	17.6	0.0	5.8	12.5	0.0	87.5	58.9	16	17
Social Sciences	1.6	2.5	4.2	2.0	3.6	2.0	85.9	70.0	192	200
All Fields	4.1	6.4	2.6	2.2	1.9	2.9	87.9	70.5	1,401	1,562

Sources: California Postsecondary Education Commission.

BEST COPY AVAILABLE

TABLE 18 Ethnicity of California State University Master's Degree Recipients by Field of Study, 1978-79 and 1982-83

Discipline Divisions	Asian or Pacific Islander		Black		Hispanic		White		Number of Students Who Declared Their Ethnicity	
	1978	1982	1978	1982	1978	1982	1978	1982	1978	1982
Agriculture and Natural Resources	9.0	3.3	0.0	0.0	5.2	1.7	80.5	91.7	77	60
Architecture and Environmental Design	4.6	8.0	2.3	0.0	2.3	4.0	88.4	86.0	43	50
Biological Sciences	5.8	7.4	0.6	2.7	1.2	2.7	89.6	77.2	155	149
Business and Management	6.9	12.6	1.5	3.9	1.8	2.7	86.0	74.0	670	927
Communications	0.0	0.0	7.3	0.0	0.0	1.7	90.2	91.4	41	58
Computer and Information Sciences	8.6	22.7	0.0	2.7	0.0	0.0	86.9	72.0	46	75
Education	3.3	3.8	6.2	6.2	5.2	7.4	58.3	76.5	3,685	2,530
Engineering	24.5	27.8	1.4	0.9	3.8	4.7	67.4	58.5	212	212
Fine and Applied Arts	4.5	6.0	1.8	2.2	2.1	4.4	89.4	86.0	329	315
Foreign Languages	11.6	5.3	0.0	1.8	32.0	25.0	53.6	66.1	69	56
Health Professions	3.7	2.4	5.9	2.8	2.2	3.5	84.2	87.7	355	488
Home Economics	7.4	10.1	4.2	4.6	2.1	10.1	81.9	71.5	94	109
Letters	2.3	2.9	3.1	3.5	1.3	4.2	88.5	85.5	383	311
Library Science	3.4	0.0	1.4	2.3	4.8	4.6	89.0	92.8	146	42
Mathematics	5.4	7.9	1.8	2.6	0.0	5.3	89.1	78.9	55	38
Physical Sciences	11.9	8.5	1.5	1.9	0.0	4.7	85.1	81.1	67	106
Psychology	4.4	2.3	4.4	7.2	3.9	5.2	81.7	80.1	388	347
Public Affairs and Services	5.3	4.7	7.3	10.4	4.5	7.3	81.1	74.6	602	643
Social Sciences	4.1	5.8	5.1	3.4	4.1	3.9	83.2	82.1	315	207
All Fields	5.4	6.2	5.4	5.0	4.7	5.7	80.7	77.8	6,917	6,827

Source: California Postsecondary Education Commission.

BEST COPY AVAILABLE

APPENDIX C

Proportion of Women Graduate Students and Degree Recipients by Field of Study in California's Public Universities, 1978 and 1982

TABLE 19 Percent and Number of Master's Degrees Awarded to Women in California, 1978 and 1982 125

TABLE 20 Percent and Number of Master's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982 125

TABLE 21 Percent and Number of Doctor's Degrees Awarded to Women in California, 1978 and 1982 126

TABLE 22 Percent and Number of Doctor's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982 126

TABLE 19 Percent and Number of Master's Degrees Awarded to Women in California, 1978 and 1982

Segment	Percent of Degrees Awarded to Women 1978	1982	Percentage Point Change	Number of Degrees Awarded to Women 1978	1982	Percent Change
University of California	39.1%	40.1%	+ 1.0%	2,191	2,396	+ 9.3%
California State University	50.8	56.0	+ 5.2	5,156	5,463	+ 5.9
Independent Institutions	31.8	39.3	+ 7.5	4,752	5,809	+ 22.2
Statewide Total	39.4%	44.8%	+ 5.4%	12,099	13,668	+ 12.9%

Source: California Postsecondary Education staff analysis.

TABLE 20 Percent and Number of Master's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982

Field of Study	Percent of Degrees Awarded to Women 1978	1982	Percentage Point Change	Number of Degrees Awarded to Women 1978	1982	Percent Change
Above Average:						
Public Affairs and Services	33.5%	48.0%	+14.5%	804	729	- 9.3%
Business and Management	16.6	28.1	+11.5	951	1,909	+100.7
Social Sciences	30.0	40.2	+10.2	573	423	- 26.1
Psychology	50.6	60.2	+ 9.6	614	948	+ 54.3
Home Economics	77.9	85.4	+ 7.5	120	152	+ 26.6
Library Science	75.0	82.3	+ 7.3	424	154	- 63.3
Fine Arts	49.7	56.2	+ 6.5	603	628	+ 4.1
Computer Sciences	15.4	21.3	+ 5.9	56	118	+110.7
Biological Sciences	34.4	39.8	+ 5.4	228	231	+ 1.3
Average:			+ 5.4%			+ 12.9%
Below Average:						
Letters	56.7	61.3	+ 4.6	556	507	- 8.8
Agriculture	21.9	26.1	+ 4.2	66	99	+ 50.0
Health Professions	68.5	72.4	+ 3.9	1,136	1,307	+ 15.1
Physical Sciences	16.4	20.2	+ 3.8	91	110	+ 20.8
Engineering	6.9	9.6	+ 2.7	167	236	+ 41.3
Communications	49.1	51.7	+ 2.6	111	89	- 19.8
Architecture	34.0	36.0	+ 2.0	104	136	+ 30.7
Mathematics	21.9	23.1	+ 1.2	60	56	- 6.6
Education	74.6	71.5	- 3.1	5,434	4,166	- 24.2

Source: California Postsecondary Education Commission staff analysis.

TABLE 21 Percent and Number of Doctor's Degrees Awarded to Women in California, 1978 and 1982

Segment	Percent of Degrees Awarded to Women 1978	1982	Percentage Point Change	Number of Degrees Awarded to Women 1978	1982	Percent Change
University of California	21.7%	26.8%	+5.4%	410	532	+29.7%
California State University	75.0	0.0	--	3	0	--
Independent Institutions	25.0	31.8	+6.8	604	770	+27.4
Statewide Total	23.6%	29.5%	+5.9%	1,017	1,302	+28.0%

Source: California Postsecondary Education staff analysis.

TABLE 22 Percent and Number of Doctor's Degrees Awarded to Women in Selected Fields of Study in California, 1978 and 1982

Field of Study	Percent of Degrees Awarded to Women 1978	1982	Percentage Point Change	Number of Degrees Awarded to Women 1978	1982	Percent Change
Above Average:						
Communications	11.1%	33.3%	+22.2%	2	2	0.0%
Library Science	18.1	40.0	+21.9	2	2	0.0
Architecture	13.0	23.8	+10.8	3	6	+ 50.0
Physical Sciences	9.2	18.5	+ 9.3	40	70	+ 75.0
Psychology	38.7	46.9	+ 8.2	141	310	+119.8
Computer Sciences	0.0	7.3	+ 7.3	0	3	--
Biological Sciences	22.4	29.2	+ 6.8	100	138	+ 38.0
Agriculture	7.1	13.9	+ 6.8	3	6	+100.0
Average:			+ 5.9%			+ 28.0%
Below Average:						
Engineering	2.5	6.2	+ 3.7	11	26	+136.0
Education	47.6	50.5	+ 2.9	192	199	+ 3.6
Public Affairs and Services	42.8	42.1	- 0.7	24	16	- 33.3
Letters	38.9	37.8	- 1.1	72	51	- 29.1
Social Sciences	27.3	25.7	- 1.6	125	97	- 22.4
Mathematics	12.3	8.7	- 3.6	11	8	- 27.2
Health Professions	43.4	35.5	- 7.9	23	98	+326.0
Fine Arts	48.2	39.2	- 9.0	40	20	- 50.0

Source: California Postsecondary Education Commission staff analysis.

REFERENCES

American Council on Education. Foreign Students and Institutional Policy. Washington, D.C.: The Council, 1982.

Berelson, Bernard. Graduate Education in the United States. New York: McGraw-Hill, 1960.

Bowen, William G. "Graduate Education: Prospects for the Future." Educational Record, 62:4 (Fall 1981) 20-30.

California Postsecondary Education Commission. 1982 Information Digest: Postsecondary Education in California. Commission Report 82-30. Sacramento, the Commission, October 1982.

Chancellor's Office, The California State University, Statistical Report, 1966-67. Long Beach: The Chancellor's Office, 1967.

--. Statistical Abstract to July 1982. Long Beach: The Chancellor's Office, 1982.

Frankena, William K., ed. The Philosophy and Future of Graduate Education. Ann Arbor: University of Michigan Press, 1980.

Furniss, W. Todd, ed. American Universities and Colleges. Washington, D.C.: American Council on Education, 1973.

Harris, John W.; Trout, William E.; and Andrews, Grover J. The American Doctorate. Washington, D.C.: The Council on Postsecondary Education Accreditation, 1980.

Mayhew, Lewis B. Graduate and Professional Education, 1980: A Survey of Institutional Plans. An Essay Written for the Carnegie Commission on Higher Education. New York: McGraw-Hill, 1970.

Mayville, William. A Matter of Degrees: The Setting for Contemporary Master's Programs. ERIC 1972 Research Report 9. Washington, D.C.: American Association for Higher Education, 1972.

National Center for Education Statistics, U.S. Department of Education. A Taxonomy of Questional Programs in Higher Education, by Robert A. Huff and Marjorie O. Chandler. Washington, D.C.: Government Printing Office, 1970.

--. Digest of Education Statistics, 1982. Washington, D.C.: Government Printing Office, 1982.

--. Digest of Education Statistics, 1983-84. Washington, D.C.: Government Printing Office, 1983.

National Commission on Student Financial Assistance. "Signs of Trouble and Erosion: A Report on Graduate Education in America." Washington, D.C.: The Commission, 1983.

National Research Council. Doctorate Production in U.S. Universities, 1920-1962. Washington, D.C.: Government Printing Office, 1963.

--. Report on Doctoral Programs, 1958-67. Washington, D.C.: Government Printing Office, 1968.

--. Summary Report, 1982, Doctoral Recipients from United States Universities. Washington, D.C.: Government Printing Office, 1982.

--. Departing the Ivy Halls. Washington, D.C.: Government Printing Office, 1983.

National Science Foundation. "Science Resource Studies Highlights." May 31, 1984, p. 4.

Pelikan, Jaroslav. Scholarship and Its Survival: Questions on the Idea of Graduate Education. Princeton: Carnegie Foundation for the Advancement of Teaching, 1983.

Special Reports on Key Business Topics. Executive Portfolio, 1984 Edition. New York: Business Week, 1984.

Strayer, George D.; Deutsch, Monroe E.; and Douglass, Aubrey A. Survey of the Needs of California in Higher Education. Berkeley: University of California Press, 1948.

University of California. The Future of Graduate and Profession Education in the University. Proceedings of the University of California Twenty-Sixth All-University Faculty Conference, March 23-25, 1971. Berkeley: Office of the President, 1971.

INDEX

Agriculture and natural resources: disciplines included in, 21; doctoral degrees awarded in California, 41; doctoral degrees awarded nationally, 29; master's degrees awarded in California, 34; master's degrees awarded nationally, 24

American Council on Education: statement on foreign students, 74

Anthropology: enrollment declines at CSU, vii; enrollment and degree statistics at CSU and UC, 110; graduates seeking employment, 14

Architecture and environmental design: disciplines included in, 21; doctoral degrees awarded in California, 41; doctoral degrees awarded nationally, 29; master's degrees awarded in California, 34; master's degrees awarded nationally, 24

Area studies: defined, 21; doctoral degrees awarded nationally, 29; master's degrees awarded nationally, 24

Art: enrollment and degree statistics at CSU and UC, 90

Asian students: ix, 59, 62, 73-74

Berelson, Bernard: 5, 127

Biochemistry: enrollment and degree statistics at CSU and UC, 78; enrollment losses in CSU and UC, vii; graduate student plans for postdoctoral study, 15

Biological sciences: degree trends nationally, 28; disciplines included in, 21; doctoral degrees awarded in California, 41; doctoral degrees awarded nationally, 29; enrollment and degree statistics at CSU and UC in selected disciplines, 77-80; enrollment losses in, vii; graduate student plans for postdoctoral study, 15; master's degrees awarded in California, 34; master's degrees awarded nationally, 24

Biology, General: enrollment and degree statistics at CSU and UC, 56, 77

Black students: x, 59-64, 73-74

Botany: enrollment and degree statistics at CSU and UC, 79; enrollment losses in, vii

Bowen, William G.: 1, 14, 127

Business and management: disciplines included in, 21; doctoral degrees awarded in California, 42; doctoral degrees awarded nationally, 28; 29; enrollment and degree statistics at CSU and UC, 81; increases in enrollment, viii, 56; master's degrees awarded in California, 35; master's degrees awarded nationally, 23, 24

California Institute of Technology: 8

California State University, The: campus enrollments and degrees awarded in selected disciplines, 75-115; enrollment losses generally, 13; enrollment losses in Eglish, linguistics, and philosophy, vii; enrollment trends, 17; foreign students, 65-68; graduate degrees awarded by field, 51-52; growth of master's degree programs, 12; history of, 12; minority students, 59-64; problems of master's degree programs, 71-72; ratio of graduate to undergraduate students, 19

Carnegie Foundation for the Advancement of Teaching: 1

Cartter, Allan: 8

Chemical engineering: enrollment and degree statistics at CSU and UC, 86

Chemistry: enrollment and degree statistics at CSU and UC, 104; graduates seeking employment, 14; graduates planning postdoctoral study, 15

Civil, construction, and transportation engineering: enrollment and degree statistics at CSU and UC, 87

Claremont Graduate School: 8

Classics: enrollment and degree statistics at CSU and UC, 97

Communications: disciplines included in, 21; doctoral degrees awarded in California, 42; doctoral degrees awarded nationally, 29; master's degrees awarded in California, 35; master's degrees awarded nationally, 24

Comparative literature: enrollment and degree statistics at CSU and UC: 98

Computer and information sciences: Asian student concentration in, 62; doctorates awarded in California, 42; doctorates awarded nationally, 29; enrollment and degree statistics at CSU and UC, 82; enrollment increases at CSU and UC, vii, 56, 82; foregin student concentration in, 66-67, 74; Hispanic student concentration in, 64; master's degrees awarded in California, 35; master's degrees awarded nationally, 24, 33

"Critical mass" in doctoral programs: 70-71

Debate: enrollment and degree statistics at CSU and UC, 101

Departmental trends in CSU and UC: 75-115

Doctoral degrees: history of in the United States, 5-8; history of in California, 8-11; numbers awarded nationally, 28-30; numbers awarded in California, 41-47

BEST COPY AVAILABLE

BEST COPY AVAILABLE

Doctoral programs: consolidation of small, 70-71; unnecessary and unviable, 70-71
Dramatic arts: enrollment and degree statistics at CSU and UC, 91

Economics: enrollment and degree statistics at CSU and UC, 111; foreign student concentration in, 66-67; graduates seeking employment, 14
Education: disciplines included in, 22; doctoral degrees awarded in California, 43; doctoral degrees awarded nationally, 28, 29; enrollment and degree statistics at CSU and UC, vii, 56, 83; master's degrees awarded in California, 36; master's degrees awarded nationally, 23, 24; percentage of all degrees awarded, vii; percentage of doctoral-degree recipients employed in the schools, 15; percentage of independent institution degrees, viii
Electrical, electronics, and communication engineering: enrollment and degree statistics at CSU and UC, 88
Employment prospects for graduate students: see job prospects: x, 1-2, 13-15
Engineering: Asian student concentration in, 62: disciplines included in, 22; doctoral degrees awarded in California, 43; doctoral degrees awarded nationally, 29; enrollment and degree statistics at CSU and UC, vii, 57, 85-89; foreign student concentration in, 66-67, 74; master's degrees awarded by independent institutitions, viii; master's degrees awarded in California, 36; master's degrees awarded nationally, 24
English: enrollment and degree statistics at CSU and UC, 99; enrollment losses at CSU, vii; graduates planning on postdoctoral study, 15; job prospects for Ph.D.s, 14
Enrollment gains and losses: vii-viii; in selected disciplines, 75-115
Ethnic minority students: see minority students, ix, 59-64, 73-74

Filipino students: 59
Fine and applied arts: disciplines included in, 22; doctorates awarded in California 43; doctorates awarded nationally 29; enrollment and degree statistics at CSU and UC in selected disciplines, 57, 90-92; master's degrees awarded in California, 36; master's degrees awarded nationally, 24
Foreign languages: doctoral degrees awarded in California, 44; doctoral degrees awarded nationally, 30; enrollment and degree statistics at CSU and UC in selected disciplines, 93-95; enrollment losses at CSU and UC, vii, 57, 93-95; graduates seeking employment, 14; master's degrees awarded in California, 37; master's degrees awarded nationally, 25
Foreign students: x, 59, 65-68, 74
Forensic science: enrollment and degree statistics at CSU and UC, 101
Frankena, William K: 1, 127
French: enrollment and degree statistics at CSU and UC, 93; enrollment losses at CSU and UC, vii, 93
Full-time and part-time enrollment: 20-21
Furniss, W. Todd: 11, 127

General Biology: enrollment and degree statistics at CSU and UC, 56, 77
Geography: enrollment and degree statistics at CSU and UC, 112; enrollment losses at CSU, vii, 112
Geology: enrollment and degree statistics at CSU and UC, 105
German: enrollment and degree statistics at CSU and UC, vii, 94
Graduate degrees: trends in, vii-x, 31-53
Graduate education: history of, 5-15; needed data about, 69; purposes of, 1
Graduate enrollments: trends in, vii-x, 17-21

Harrison, Dorothy: 14
Harvard University: first Doctor of Education awarded in 1920, 6
Health professions: disciplines included in, 22; doctoral degrees awarded in California, 44; doctoral degrees awarded nationally, 30; master's degrees awarded in California, 37; master's degrees awarded nationally, 25, 27; nursing enrollment and degree statistics at CSU and UC, 96
Helping professions: low foreign student enrollments in, 66-68
Helping services and social work: enrollment and degree statistics at CSU and UC, 109
Hispanic students: ix, 59-64, 73-74
History: enrollment and degree statistics at CSU and UC, 113; enrollment losses at CSU, vii; graduates seeking employment, 14
Home economics: disciplines included in, 22; doctoral degrees awarded in California, 44; doctoral degrees awarded nationally 30; master's degrees awarded in California, 37; master's degrees awarded nationally, 25
Humanities: job prospects bleak, 14

Independent colleges and universities: enenrollment growth in, vii, 17-19; graduate degrees awarded by, 33-47, 50
Information and computer sciences: see computer and information sciences
Interdisciplinary studies: defined, 22; doctoral degrees awarded nationally, 30; master's degrees awarded nationally, 25

Job prospects for graduate degree recipients: x, 1-2, 13-15
Johns Hopkins University: 5, 11

Letters: disciplines included in, 22; doctorates awarded in California, 45, 57; doctorates awarded nationally, 30; enrollment and degree statistics at CSU and UC in selected disciplines, 97-102; graduate degree decline nationally, 23
Library science: definition, 22; doctorates awarded in California, 45; doctorates awarded nationally, 30; graduate degree decline in California, 38, 45; master's degrees awarded in California, 38; master's degrees awarded nationally, 25, 27

BEST COPY AVAILABLE

Linguistics: enrollment and degree statistics at CSU and UC, 100; enrollment losses at CSU, vii; foreign student concentration in, 66-67
Literature, comparative: enrollment and degree statistics at CSU and Uc, 98

Master of Business Administration (MBA): possible "glut," 72
Master's degree: declining value as a credential for employment, x, 12; history, 11-13; program problems at CSU, 71-72; review needed, 72-73
Master's degrees: number awarded in the United States, 23-27; number awarded in California, 34-40; statistics on employment of graduates needed, 72
Mathematics: Asian student concentration in, 62; disciplines included in, 22; doctoral degrees awarded in California, 45; doctoral degrees awarded nationally, 30; foreign student concentration in, 66-67; graduate enrollment and degree statistics at CSU and UC, 103; graduate enrollment and degree trends, 57; master's degrees awarded in California, 38; master's degrees awarded nationally, 25
May, Ernest: 14
Mayhew, Lewis B.: 8, 127
Mayville, William: 11, 12, 127
Men and women: ratios of graduate students, viii-ix; doctorates awarded in California, 126; doctorates awarded nationally, 28; master's degrees awarded in California, 125; master's degrees awarded nationally, 27
Microbiology: enrollment and degree statistics at CSU and UC, 80; enrollment losses at CSU and UC, vii
Minority students: ix, 59-64, 73-74
Music: enrollment and degree statistics at CSU and UC, 92

National Commission on Student Financial Assistance, 1, 127
Natural sciences: disciplinary change in, vii
Non-resident aliens: see foreign students, x, 59, 65-68, 74
Nursing: enrollment and degree statistics at CSU and UC, 96

Pacific island students, 59
Part-time and full-time enrollment: 20-21
Pelikan, Jaroslav: 1, 128
Ph.D. degree: see doctoral degrees
Philosophy: enrollment and degree statistics at CSU and UC, 102; enrollment losses at CSU, vii; job prospects for Ph.D.s in, nationally, 14
Physical education: enrollment and degree statistics at CSU and UC, 84
Physical sciences: disciplines included in, 22; doctoral degrees awarded in California, 46; doctoral degrees awarded nationally, 30; enrollment and degree statistics at CSU and UC in selected disciplines, 104-106; master's degrees awarded in California, 39; master's degrees awarded nationally, 25
Physics: enrollment and degree statistics at CSU and UC, 106; foreign student concentration in, 66-67; graduates planning postdoctoral study, 15
Political science and government: enrollment and degree statistics at CSU and UC, 114; enrollment losses at CSU, vii
Postdoctoral study and research: 15
Psychology: at independent institutions, vii; disciplines included in, 22; doctorates awarded in California, 46; doctorates awarded nationally, 30; enrollment and degree statistics at CSU and UC, 107; enrollment and degree trends at CSU, 57; master's degrees awarded in California, 39; nationally, 25
Public administration: enrollment and degree statistics at CSU and UC, 108; enrollment trends in CSU, 57
Public affairs and services: disciplines included in, 22; doctorates awarded in California, 46; doctorates awarded nationally, 30; enrollment and degree statistics at CSU and UC in selected disciplines, 108-109; master's degrees awarded in California, 39; master's degrees awarded nationally, 25

Social sciences: disciplines included in, 22; doctorates awarded in California, 47; doctorates awarded nationally, 30; enrollment and degree statistics at CSU and UC in selected disciplines, 110-115; enrollment and degree trends in CSU and UC, viii, 58; master's degrees awarded in California, 40 master's degrees awarded nationally, 23, 25, 27
Social work and helping services: enrollment and degree statistics at CSU and UC, 109
Sociology: enrollment and degree statistics at CSU and UC, 115; enrollment losses at CSU, vii
Solmon, Lewis: 14
Spanish: enrollment and degree statistics at CSU and UC, 95; enrollment losses at CSU and UC, vii
Speech, debate, and forensic science: enrollment and degree statistics at CSU and UC, 101
Stanford University: 8-9

Undergraduate enrollments: foreign students, 65; ratio to graduate enrollments at CSU and U
65; ratio to graduate enrollments at CSU and UC, viii
University of California: Berkeley, 8-11, 19; campus enrollments and degrees awarded in selected disciplines, 75-115; Davis, 9; enrollment gains and losses, vii-viii, 17; first doctorate, 8; foreign students, 65-68; graduate degrees awarded in each field, 33-51; minority students, 59-64; ratio of graduate to undergraduate students, 19; UCLA, 9, 19; unnecessary and unviable doctoral programs, 70-71
University of Southern California: 8-9

Women: increased enrollment and degree recipients, viii-ix, 73-74, 125-126; proportion of doctoral degree recipients, 28, 126; proportion of master's degree recipients, 27, 125

Yale University: 5

BEST COPY AVAILABLE

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
1020 Twelfth Street, Sacramento, California 95814 Telephone (916) 445-7933

A state agency created in 1974 to assure the effective utilization of public postsecondary education resources, thereby eliminating waste and unnecessary duplication, and to promote diversity, innovation, and responsiveness to student and societal needs through statewide planning and coordination.

MEMBERS

Representing the General Public:

Seth P. Brunner, Chairperson	Sacramento
C. Thomas Dean	Long Beach
Seymour M. Farber	San Francisco
Patricia Gandara	Sacramento
Ralph J. Kaplan	Beverly Hills
Roger C. Pettitt	Los Angeles
Sharon N. Skog	Mountain View
Thomas E. Stang, Vice Chairperson	Los Angeles
Stephen P. Teale	Modesto

Representing the Regents of the University of California:
Sheldon W. Andelson — Los Angeles

Representing the Trustees of The California State University:
Claudia H. Hampton — Los Angeles

Representing the Board of Governors of the California Community Colleges:
Peter M. Finnegan — San Francisco

Representing the Independent California Colleges and Universities:
Jean M. Leonard — San Mateo

Representing the Council for Private Postsecondary Educational Institutions:
Darlene M. Laval — Fresno

Representing the State Board of Education:
Angie Papadakis — Rancho Palos Verdes

ALTERNATE REPRESENTATIVES

Representing the Regents of the University of California:
Yori Wada — San Francisco

Representing the Trustees of The California State University:
Celia I. Ballesteros — San Diego

Representing the Board of Governors of the California Community Colleges:
Jane M. Tolmach — Oxnard

BEST COPY AVAILABLE